This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

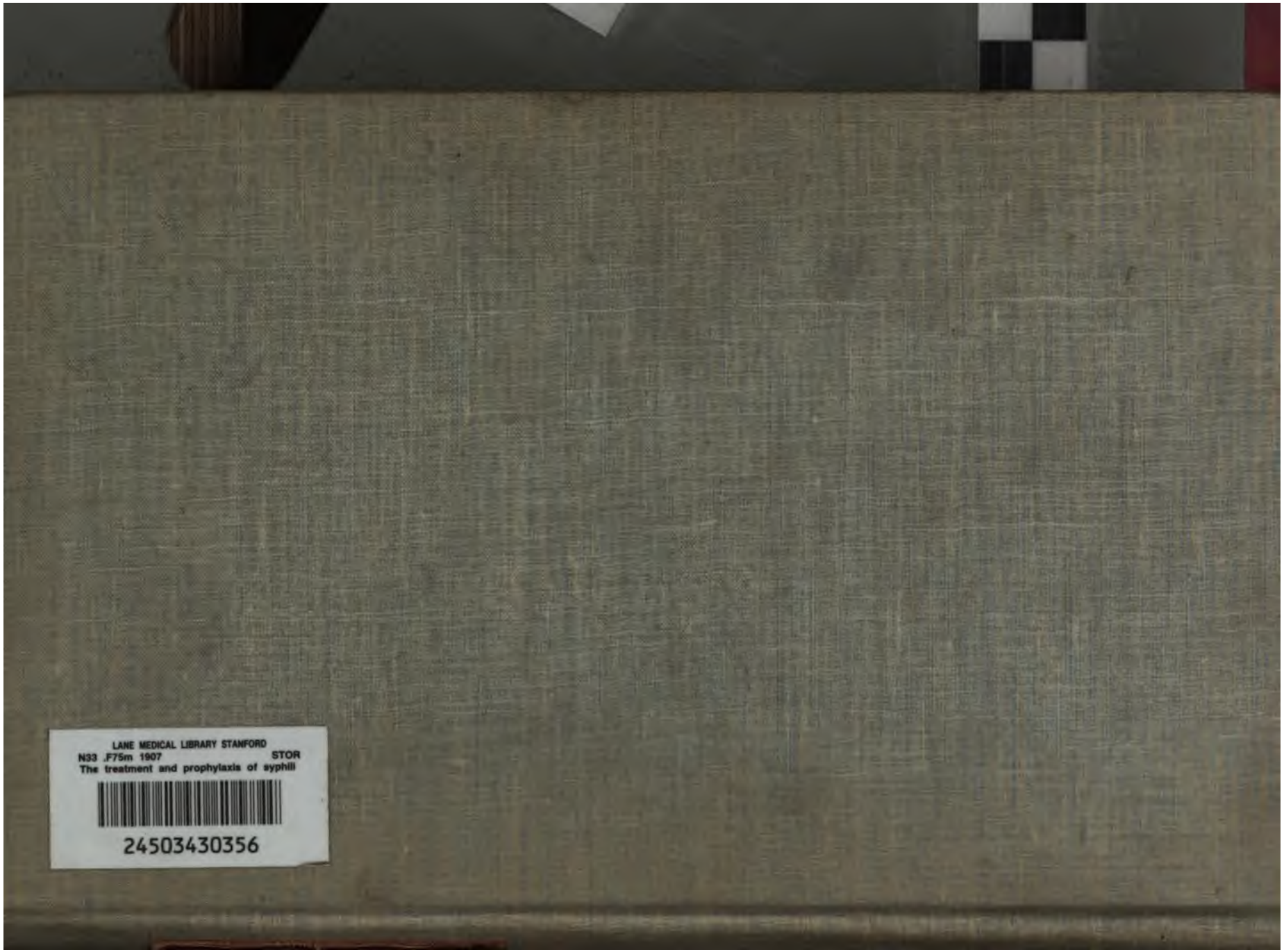
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`


LANE MEDICAL LIBRARY STANFORD
N33 .F75m 1907 STOR
The treatment and prophylaxis of syphili
24503430356

Samuel G. Boyd,
215, San Francisco,

LANE
MEDICAL LIBRARY
SEAL OF THE LELAND STANFORD JUNIOR UNIVERSITY
1885
Gift
Dr. M. L. Tainter

THE TREATMENT

AND

PROPHYLAXIS OF SYPHILIS

THE
TREATMENT AND PROPHYLAXIS
OF
SYPHILIS

BY

ALFRED FOURNIER

Professor at the Faculty of Medicine, Member of the Academy of Medicine,
Physician to the St. Louis Hospital, Paris

English Translation
OF THE
SECOND EDITION REVISED AND ENLARGED
BY

C. F. MARSHALL, M.D., F.R.C.S.

Late Ass't-Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London
Formerly Resident Medical Officer to the London Lock Hospital

AMERICAN EDITION, REVISED AND CORRECTED, WITH AN APPENDIX
BY

GEORGE M. MACKEE, M.D.

Instructor of Dermatology at the New York University and Bellevue Medical College

NEW YORK
REBMAN COMPANY
1123 BROADWAY

COPYRIGHT, 1907, BY
REBMAN COMPANY
NEW YORK

LANE LIBRARY

1887

TRANSLATOR'S PREFACE TO THE TREATMENT OF SYPHILIS

It is a remarkable fact that up to the present time only one of Professor Fournier's works has been translated into the English language—viz., "Syphilis and Marriage," which was published in 1881. This is greatly to be regretted, since the series of masterly volumes written by him constitute the classics of modern syphilology. It is no doubt due to the absence of translations that facts which were fully explained by Fournier a quarter of a century or more ago are apparently little known in England except among a few specialists, and are almost entirely ignored in the text-books. Messrs. Rebman are therefore to be congratulated on their enterprise in securing the rights of translation of Fournier's two most recent publications—"The Treatment of Syphilis" and "The Prophylaxis of Syphilis"—the rendering of which into what, I hope, is approximately equivalent English has been a congenial task.

C. F. M.

92152

TRANSLATOR'S PREFACE TO THE PROPHYLAXIS OF SYPHILIS

Syphilis, tuberculosis, and alcoholism have been well described as the three great plagues of modern society; but while we have crusades against tuberculosis and alcoholism, the greatest of these plagues, syphilis, is neglected and tabooed. In England syphilis is not only tabooed, but has been actually encouraged by the repeal of the Contagious Diseases Acts.

It has been said that these Acts were repealed because they proved to be a failure. This is not the truth: they were repealed owing to the successful efforts of a society of fanatics known at that time as the "shrieking sisterhood," who used their pernicious influence to hoodwink an ignorant and credulous public under the cloak of religious and moral motives. This agitation unfortunately succeeded in influencing Parliament, and the result was the repeal of the Acts in 1886, after which, as Professor Fournier truly remarks, "*prostitution, and with it syphilis, regained its liberty throughout the British Empire.*"

It is absurd to suppose that any system of Contagious Diseases Acts can abolish syphilis off the face of the earth. Such Utopia could only be attained by putting a large proportion of the human race in quarantine for an unknown number of years. But this is no argument against making some effort to diminish the amount of venereal disease among the public, especially among the army and navy. That the Acts introduced in 1869 were anything but a failure in this respect

is shown by the following extracts from the late Mr. J. R. Lane's Harveian Lecture on Syphilis, delivered in 1876:[1]

"In conclusion, I will allude briefly to the question of the prevention or diminution of venereal disease by legislative measures. If we consider the prevalence of the disease among all classes, the many ways in which the innocent, as well as the guilty, may become its victims, its disastrous results in many cases, and its general deteriorating influence on the public health, it is not going too far to speak of it as one of the most important of the sanitary questions of the day. Unfortunately the subject is unsuitable for general discussion, and its urgency has therefore never yet been properly appreciated by the public.

"Most Continental States have long had regulations for the control of prostitution and the prevention of venereal disease; but it is only recently that an attempt in the same direction, and that as yet a very partial one, has been made in this country. In 1864 an Act of a tentative character was passed by Parliament, but it failed on account of its voluntary character, and the consequent impossibility of exercising sufficient control over the women brought under its operation. It was superseded, therefore, in 1866 by a more efficient measure founded on the recommendations of the Medical Committee appointed by the Admiralty. Another supplementary Act was passed in 1869. The operation of these Acts was confined to certain military and naval stations, and their main object was to check the prevalence of venereal disease in the army and navy. They were founded on the principle of police registration and supervision of all known public prostitutes in a district, their periodical medical examination, their immediate transfer to hospital when found diseased, and their compulsory detention till cured.

"In 1867 the Harveian Society appointed a committee, under

[1] Reproduced by permission of the proprietors of the *Lancet*.

the presidency of Dr. Pollock, to inquire into the question, and a large mass of evidence was collected from all parts of the country, showing the great prevalence of disease and the necessity for general restrictive measures for its prevention. The report was published, and has been frequently quoted and referred to. Out of that committee arose an association for the purpose of extending the benefits of the Acts to the general population, which was soon joined by a large number of influential persons. That association has not succeeded in affecting its main object of extension in consequence of the fanatical and unscrupulous opposition which soon afterwards rose up, and has been strenuously maintained, but it has worked hard to combat that opposition, and to place the matter in its true light before the public and before Parliament, and it may fairly claim to have had a large share in saving the Acts from repeal; in fact, repeated motions for their repeal have been rejected by large and increasing majorities.

"A Select Committee of the House of Commons has during the last two years, 1879–1880, been pursuing an exhaustive inquiry into the whole question, and it is to be hoped that the voluminous evidence which they are collecting will be such as to satisfy the public at large of the great benefits which the Acts have already brought about, and to show the unfounded and untruthful nature of the statements which have been so widely spread abroad as to their oppressiveness and cruelty.

"It is worthy of remark that the opposition, promoted mainly through the agency of platform agitators, has been most active in places remote from the operations of the Acts, where there has been no opportunity of obtaining practical knowledge of their working; whereas their advantages are fully understood and appreciated in the garrison and seaport towns where they have been in force, a great majority of the respectable inhabitants of which are most anxious that they should be maintained.

"Our principal seaport towns are hotbeds of syphilitic contagion. The amount of disease among the merchant seamen—who are under no inspection or control while on shore—is consequently very great, and the inconvenience and danger often arising from their becoming disabled from this cause while at sea is notorious. It is a disgrace to this country also that the sailors belonging to our mercantile marine should with any justice be regarded by the authorities of foreign ports as a fertile source of disease, and one of the chief obstacles to the efficiency of their preventive measures. Much of this mischief might be prevented by insisting on these men being submitted to a medical examination before being allowed to proceed on their voyage.

"These Acts have been strikingly successful at the military and naval stations to which they have been applied, notwithstanding the disadvantages arising from the limited area in which they work and the constant influx of newcomers who are diseased. Primary syphilitic sores have been diminished in the army and navy at the protected stations by more than one-half, although at those which are unprotected there has been increase instead of diminution. Secondary affections have also been found less frequent and less severe. Military and naval medical officers bear unanimous testimony to the great diminution of syphilitic disease in the men under their charge, and also to its milder character. In the less important complaint, gonorrhœa, the result has not been so strikingly marked, although in the last few years especially there has been a very decided diminution.

"If any real sanitary good is to be done in this direction, it can only be by legislative means. It is useless to talk of voluntary Lock Hospitals. I have myself assisted in carrying out the voluntary system at the London Lock Hospital for twenty-five years, and for ten years I have seen the voluntary and com-

pulsory systems at work side by side in the same institution. From these exceptional opportunities for comparing the two, I am convinced that nothing but the compulsory periodical examination of prostitutes, and their compulsory detention in hospital until cured, will have any material effect in diminishing the prevalence of venereal disease among the population, while to the women themselves the advantage of early treatment is incalculable. This latter fact is well exemplified by the marked contrast, as regards severity, between the two classes of cases. The women under the Acts only exceptionally present symptoms of an aggravated character, while the voluntary patients, in consequence of neglect and delay in applying for treatment, constantly furnish examples of all the most severe forms of the disease.

"Voluntary Lock Hospitals on an adequate scale will never be supported by the public, and are not likely to be established by the State, and if they were they would be of little use. Private benevolence never has done, and never will do, anything approaching to the good which has been effected in this direction, quietly and unostentatiously, through the agency of these much-maligned Acts of Parliament."

An attempt was made to reintroduce the Contagious Diseases Acts by Lord Lister in 1897, and for this purpose I examined all the old case-books of the London Lock Hospital during the period in which the Acts were in force. A comparison of the average type of disease in prostitutes who were under supervision with the type of disease in unregistered prostitutes absolutely confirmed the statements, quoted above from Mr. Lane, that cases were much less severe among the registered prostitutes. Moreover, in those days the registered women, who were kept apart from the others, were not allowed to leave hospital till they were free from contagious lesions, while the unregistered class could leave of their own accord, and frequently

resumed their "profession" while in a contagious condition. This effort of Lord Lister's was, however, doomed to failure.

Another point to be considered, and one upon which Professor Fournier lays special stress, is the deficiency in the teaching of these subjects. If instruction in these subjects is inadequate in France, how much more so must it be in England, where there is no systematic course of instruction on syphilis and venereal diseases in any medical school in the country! As a mater of fact, the average medical man starts practice knowing little or nothing of one of the gravest diseases which afflict mankind.

This fact was brought before the notice of the Committee on Physical Deterioration in 1905 by Sir Alfred Cooper, who remarked that "the amount of teaching done on this subject is very limited, so that at the commencement of their career the majority of medical practitioners are only possessed of a very insufficient knowledge of the subject. It is advisable that there should be special departments at general hospitals for the treatment of this class of disease, and all such cases should be relegated to that department; it should be under the charge of some one specially skilled in that branch of professional knowledge, and a course of instruction in that subject should be compulsory for every student. These special departments have been in existence for years past in the majority of European countries and in America, and, further, special wards are set aside for the reception of such cases."[1]

It was urged on the same occasion by Sir Alfred Cooper, Sir Victor Horsley, and Dr. F. W. Mott, that there should be a State inquiry by Royal Commission into the prevalence of syphilis and the means which should be taken to check it. This is as far as we have got in England toward an attempt to check the modern plague; but it must be remembered that a similar

[1] Reproduced by permission of Sir Alfred Cooper.

proposal made by the Academy of Medicine of Paris to the municipal authorities nearly twenty years ago failed in effecting the reforms which were proposed, as is pointed out in this volume. However, I hear from Dr. Barthélemy, of the St. Lazare Hospital, Paris, that he anticipates a change for the better in the near future.

The necessity of reforms in the teaching of syphilis and venereal diseases was also pointed out by Mr. Malcolm Morris before the Advisory Board for Army Medical Services, on the question of "The Treatment of Venereal Diseases and Scabies in the Army," in 1904. Mr. Morris remarked as follows: "I have had twenty-four years' teaching experience, and I venture to say that there are very few men going away from the hospital who know anything about the subject. And, therefore, I think the strongest recommendation I can make to this Committee is that there should be centers where men who are going to treat this disease should be taught. And the only way would be by establishing a hospital and a school for their instruction in the big centers, to which civilian experts should be attached as teachers. It is snubbed in every medical school in London and in the country. It is snubbed as a subject; it is not taught, except more or less incidentally and in an indifferent manner, just when it happens to come into different departments, such as the eye or the throat. But, as a whole, it is not taught in the routine way it should be to stamp out the national scourge. The only way that could be done would be by establishing centers where it is not only taught but studied."[1]

Another important question is the education of the public with regard to the dangers of marriage among syphilitic subjects. On this point Professor Senator remarks: "It is not unreasonable to hope that when the knowledge of the relations between marriage on the one hand, and health and disease on

[1] Reproduced by permission of Malcolm Morris, Esq.

the other, have become more general in medical circles, the profession will, by its exertions, by instruction, explanations and warnings, succeed in convincing the larger public as to the utility, and even the necessity, of taking into consideration the physical condition of the parties contracting or living in marriage."[1]

The problem of the prevention of syphilis is one which sooner or later will have to be grappled with by all nations, and that nation which first successfully deals with the problem will survive in the struggle for existence.

C. F. M.

TRANSLATOR'S NOTE.—The original work, "Prophylaxie de la Syphilis," from which this book is translated, consists of a number of articles and lectures which Professor Fournier has written at different times on subjects connected with the prevention of syphilis. As this involved a good deal of repetition of the same matter, I have slightly altered the arrangement, and avoided certain repetitions by means of cross-references.

[1] "Health and Disease in Relation to Marriage and the Married State." Edited by Professors Senator and Kaminer. English translation by J. Dulberg. Rebman, 1905.

TABLE OF CONTENTS

PART I

THE TREATMENT OF SYPHILIS

INTRODUCTION

PAGES

Definition of the subject—How the treatment of syphilis should be understood—It is one thing to treat a syphilitic lesion, but another thing to treat syphilis 3–5

CHAPTER I

IS IT NECESSARY TO TREAT SYPHILIS?

The doctrine of expectation—The deplorable results of the expectant method—Statistics 6–13

CHAPTER II

IS IT NECESSARY TO TREAT EVERY CASE OF SYPHILIS?

Cases of grave, medium, and mild syphilis—Is there any criterion by which we can estimate the quality of early syphilis and its future prognosis?—Alleged factors in this provisional diagnosis—Discussion—In the case of syphilis the present is in no way the mirror of the future—Statistics—Antecedents of tertiarism—In the great majority of cases the tertiary manifestations follow secondary syphilis of a benign character—Conclusions 14–25

CHAPTER III

IS THERE AN ABORTIVE TREATMENT FOR SYPHILIS?

History of the question—Influence of microbial doctrines in favor of the abortive method—Two groups of abortive methods—Blockade of the chancre—Destruction of the chancre—Cauterization of the chancre—Specific cauterization 26–32

CHAPTER IV

EXCISION OF THE CHANCRE

PAGES

Technique of the operation—Local results—General results—Does excision eradicate syphilis?—Statistics—What reliance is to be placed on the alleged success of the method?—Capital objections raised against it—What the result of excision ought to be in order to be convincing—Programme of future experimentation—It is quite possible that excision may have had successes, but it is not yet proved—Failure of the method in cases where a test has been established—Failure of the method in cases of even early incision—Does excision constitute, as has been affirmed, a method of attenuation?—Practical conclusions on the method of excision of chancres 33–47

CHAPTER V

THE GENERAL TREATMENT OF SYPHILIS

Historical survey—The treatment of syphilis includes all the indications required to relieve or cure a patient affected with syphilis—Three therapeutic factors: specific remedies; auxiliary medication; hygiene—Importance of the two last factors 48–52

CHAPTER VI

SPECIFIC MEDICATION

The numerous remedies regarded as exercising a direct corrective action on syphilis 53–55

CHAPTER VII

MERCURY

The different fortunes of this remedy, sometimes exalted, sometimes derided—The many accusations brought against it—Action of mercury—What harmful effects may it produce?—Four kinds of possible accidents: (1) Ptyalism—Mercurial stomatitis—It is possible to avoid the harmful effects of mercury on the mouth—How?—Choice of remedy—Mode of administration—Previous examination and preparation of the mouth—Care of the mouth during treatment—Warning stomatitis—Importance of careful buccal hygiene—Education of the patient with regard to the possible accidents of treatment—Temporary suspension of mercurial treatment—(2) Gastric or intestinal complications—(3) Nutritive or general complications—(4) Cutaneous affections (*hydrargyrism*)—Eruptions in hydrargyrism—Mercury is only dangerous on account of its powerful action on the organism—Necessity of taking advantage of this action, with precaution against possible accidents, which can be prevented or modified in the great majority of cases 56–71

CHAPTER VIII

THE THERAPEUTIC ACTION OF MERCURY

PAGES

Division of the question: (1) Does mercury exert a curative action on the symptoms of syphilis?—Evidence of daily observation—(2) Does mercury exercise an action on the disease as a whole and on its future?—Different opinions—*A priori*, how can mercury exercise a curative action on all the manifestations of syphilis without influencing the cause of these lesions?—Clinical evidence: (1) The preventive action exercised by the remedy on the manifestations of the secondary period—(2) Preventive action on the tertiary period—Frequency of tertiary manifestations in subjects with syphilis untreated or insufficiently treated—Rarity of the same manifestations in subjects correctly treated for long periods—Statistics—(3) Preventive action exercised on syphilitic heredity—Conclusions—It is, on the whole, the preventive action of mercury which constitutes the chief benefit of mercurial medication in syphilis—Objections to the mercurial treatment of syphilis—"Mercury does not prevent recurrences—It may produce divers or even grave lesions—It does not constitute a specific"—Discussion 72–80

CHAPTER IX

METHODS OF ADMINISTRATION OF MERCURY

Four principal methods—The choice between these different methods—This choice should not be made according to theoretical and general considerations; it should be subordinated to the clinical indications of particular cases, indications necessarily of the most variable nature—There is no method which suits every case . 81–82

CHAPTER X

THE METHOD OF MERCURIAL INUNCTION

Former treatment, including sequestration, overheating, depuration, diet, and salivation—The "great remedies" of former times—The "dark chambers," the "saucepan," etc.—Theory of salivation eliminating the virus of syphilis—The "good salivation" of our fathers—Contemporary treatment—Reaction against the doctrine of the necessity of flux from the mouth—Actual practice of inunction—Gray ointment—Mercurial soaps—Dosage—Usual doses—Intensive doses—When should inunction be performed?—Where should it be practiced?—Necessity of varying the seat of rubbing—Method of rubbing and care required afterwards—Duration—Inunction with glass rubber—Duration of treatment by inunction—Limit of tolerance not to be exceeded—How does inunction act?—Theory of cutaneous absorption—Merget's theory—Advantages of the method;

PAGES

(1) Inunction constitutes an active and powerful treatment as regards therapeutic effects; (2) it avoids the digestive tract; (3) it leaves the stomach free for other remedies—Inconvenience of the method—A dirty and repugnant mode of treatment—Possible occurrence of diarrhœa, lumbago, hydrargyrism, and especially stomatitis—Stomatitis from mercurial inunction—Very different from ordinary mercurial stomatitis in being more rapid in onset, more general at first, and more severe—It is the malignant form of mercurial stomatitis—With inunction we are never free from the danger of stomatitis—Clinical example—For this reason treatment by inunction should only be chosen in preference to other methods of treatment under certain special conditions—Unequal action of inunction in different cases—Probable explanation of this fact—In what cases are inunctions especially suitable?—As a method of contingency under certain special indications they constitute a perfect mode of treatment, but they also far from satisfy the conditions necessary to render them a routine method in the treatment of syphilis . 83–98

CHAPTER XI

MERCURIAL PLASTERS—MERCURIAL BATHS

Emplastrum de Vigo—Quinquaud's calomel sparadrap—Mercurial balneotherapy 99–102

CHAPTER XII

METHOD BY FUMIGATION

An old method called the treatment "by perfumes"—Present-day method—Alleged advantages of the method—Inconvenience and dangers—Why fumigation should not constitute a routine mode of treatment—Mercurial flannels 103–108

CHAPTER XIII

METHOD BY SUBCUTANEOUS INJECTIONS

What advantage does the hypodermic method possess compared with the other methods of administration of mercury?—Discussion—Technique of the method—Two rival methods . . . 109–114

CHAPTER XIV

METHOD BY FREQUENT INJECTIONS

The many compositions used for these injections—Sublimate—Albumino-mercuric peptone, or solution of Delpech—Cyanide—Benzoate—Biniodide—Advantages claimed for this method—Discussion—

PAGES

Nothing confirms the superiority claimed over other methods of treatment- -Inconvenience and dangers of the method—Painful phenomena—Immediate and remote pain—Phenomena of local reaction—Nodosities, abscess, gangrene—Diminution of accidents due to improvement in technique—Conclusions—Without being absolutely inoffensive, the method of soluble injections has not so many drawbacks as to exclude it from the therapeutics of syphilis; but, on account of its inherent inconvenience, it should only be preferred to other methods under certain particular indications—Investigation of these indications—Why the system of soluble injections should not be instituted as a routine method in the treatment of syphilis 115–127

CHAPTER XV

METHOD BY INFREQUENT INJECTIONS

Principle of the method—Massive injections—First attempts disastrous —Many accidents, even fatal cases—Two grave objections to the method: (1) It introduces into the organism a considerable dose of an insoluble mercurial salt without the possibility of regulating its solution and absorption; (2) it is impossible for the physician to regulate the dose, or to suspend it when required; in other words, to be master of the situation—How, by the abortiveness of this method, another method has arisen which is now placed in the first rank of antisyphilitic medications—Numerous insoluble compounds proposed as suitable for this mode of treatment—Preference justly given to calomel 128–132

CHAPTER XVI

CALOMEL INJECTIONS

Pharmaceutical preparation—Doses—Average dose—Directions for treatment—Therapeutic action—Action particularly energetic, intensive, and rapid—Cases with surprising results—Examples—Enthusiasm of certain physicians for this method, but possible failures—Frequency of relapses—Inconveniences and even dangers of calomel injections—Dissensions on the last point—Special investigation by the author—What are the physiological effects of an injection of 5 centigrammes of calomel?—(1) Ptyalism; (2) gastro-intestinal disturbance; (3) general accidents—Calomel fever—(4) Accidents of local reaction—Inflammatory swelling—Pseudo-phlegmon of the buttock—Nodes—Abscess—Aseptic amicrobial abscesses, foci of liquid necrosis—(5) Phenomena of painful reaction—Strange variability—Statistics of frequency—Date of appearance—Degree of pain—Possible association of painful phenomena and febrile symptoms—Possible intolerance to the drug—On the whole the question of pain constitutes the major objection to the method—Rare accidents: Pulmonary embolism, hæmatoma, hæmorrhage, neuritis,

PAGES

trophic changes—Practical conclusion: An acceptable method as regards temporary medication, but unsuitable as a routine method of treatment for syphilis—Useless for the great majority of cases—Obnoxious and dangerous by reason of hindering patients from undergoing treatment long enough for cure—Is it an exceptional method?—It is best regarded as a method of special indication—The signal service, even extraordinary, which it is capable of rendering in certain cases—Should it be commenced at first, in the period of the chancre? 133–158

CHAPTER XVII

INJECTIONS OF GRAY OIL AND OTHER MERCURIAL PREPARATIONS

Salicylate of mercury—Thymol acetate—Massive injections of insoluble salts of mercury 159–168

CHAPTER XVIII

INTRAVENOUS INJECTIONS

Technique—No advantage over other methods 169–173

CHAPTER XIX

METHOD BY INGESTION

Preference generally given to this method—Reasons for this preference—An easy and practical method—Like all others, however, it has its contra-indications—Numerous compounds recommended—Bichloride of mercury—Van Swieten's liquor—Dupuytren's pills—Protoiodide of mercury—Comparison of bichloride with protoiodide, with regard to their action on the saliva, gastro-intestinal system, and their curative effects—With sublimate there is little salivary action, but considerable gastric intolerance—With protoiodide there is salivary action, but less gastric intolerance—From the therapeutic point of view the effects are practically equal, but a more intense effect may be obtained by protoiodide by greater liberty in increasing doses—Indications which appear to apply to each of these two remedies more specially—In what pharmaceutical forms should these two remedies be administered?—When and in what conditions should they be administered?—Therapeutic doses—As a rule, mercury is not administered in efficacious doses—Average efficacious dose—Symptomatic dose—Dose for the disease 174–199

CHAPTER XX

IODIDE OF POTASSIUM

PAGES

Wallace and Ricord—A remedy easily absorbed and diffusible—Physiological action—Antisyphilitic action powerful and sometimes marvelous—Theory of the antisyphilitic action of iodide by liberated mercury—Inconvenience and dangers of iodide—Iodic savor—Coryza—Acne—Iodic influenza—Neuralgic pains—Dental pains—Sialorrhœa—Conjunctivitis—Purpura—Fluctuating swellings and œdema—Different iodide eruptions: bullous, furunculo-carbuncular, pustulo-crusted—Iodic œdema of the respiratory passages—Œdema of the glottis, sometimes requiring tracheotomy—Fatal cases—Pathogeny of these lesions—Modes of administration of iodide—Three methods: by the mouth, by enema, by subcutaneous injection—Details of administration by the mouth—Doses—Average efficacious dose—Intensive doses—Fantastic doses—Directions for iodide treatment—In what doses should treatment be commenced and continued?—Harmful influence of small doses—Necessity of treatment by increasing doses to maintain the action of the remedy—Iodide is not indispensable in the treatment of syphilis—Can it supplement mercury?—Three reasons against exclusive treatment by iodide—Application of mercury especially to secondary symptoms, and iodide to tertiary symptoms—Iodide, however, gives good results in certain secondary lesions—The important rôle of mercury in the tertiary period—It is especially on account of its preventive action that mercury is useful in the tertiary stage—With regard to preventive medication, mercury is more to be depended on than iodide—Why the cure of a tertiary lesion should always be followed by mercurial treatment—Remedies proposed to replace iodide of potassium 200–232

CHAPTER XXI

MIXED TREATMENT

Are mercury and iodides antagonistic?—Two methods of mixed treatment—(1) Association of the two remedies in a pharmaceutical preparation—Syrup of Gibert, solutions of iodide and biniodide of Ricord, etc.—(2) Separate administrations of mercury and iodide—Two reasons in favor of the second method 233–236

CHAPTER XXII

SERUM TREATMENT

Therapeutic effects—Attempts at serum-therapy 237–239

CHAPTER XXIII

GENERAL MANAGEMENT OF THE TREATMENT OF SYPHILIS

PAGES

At what period should the treatment of syphilis be commenced?—Should it be begun with the chancre?—Two kinds of cases—(1) Undoubted syphilitic chancre—Indication in this case to commence treatment at once—Contradictory opinions—(2) Chancre of doubtful nature—In this case mercury should be postponed—Grave inconvenience of treatment commenced on an uncertain diagnostic basis—How should treatment be continued?—Two opposed methods—Different characters of the two methods 240–251

CHAPTER XXIV

THE OPPORTUNIST METHOD

Is it true, as the supporters of this method assert, that mercury only acts on the disease when active, and not on latent syphilis?—Is it true that it acts on the symptoms, and not on the morbid principle?—Refutation—Success claimed for the method—Unconscious opportunists—The opportunist method is that which furnishes the greatest number of cases of tertiarism 251–256

CHAPTER XXV

THE PREVENTIVE METHOD

Fundamental principles of the method—Three objections easily refuted—The preventive method confers on patients the double benefit—(1) of rendering the secondary period almost always slight; (2) of rendering the tertiary period mild in the majority of cases—It constitutes the most certain resource which we can offer to patients—Advantages of intermittent treatment—Necessity for prolonged treatment—For how long is it necessary to treat syphilis in order to render it harmless?—Impossibility of any absolute solutions of this problem—Practical examples—Recurrent syphilis—Approximate estimation of the average duration of serious antisyphilitic treatment—Dupuytren, Vidal, Chomel, Ricord, etc.—Personal results—Evident necessity of more prolonged treatment than that hitherto carried out—Present reaction against the short treatment of former times—A chronic disease requires chronic treatment—Analogies from clinical experience—Does the administration of iodide of potassium constitute the necessary complement of mercurial treatment?—Usual practice—Administration of iodide after mercurial courses, by intermittent treatment at intervals—What should be the duration of this treatment? 257–277

CHAPTER XXVI

CHRONIC INTERMITTENT TREATMENT

PAGES

The double principle on which this method is based—What it consists in: a series of courses, mercurial at first, afterwards iodide, arranged during the course of the first years of the disease and separated from each other by periods of rest, increased in proportion to the time elapsed since the chancre—Scheme of application—This programme cannot be absolutely fixed—The many changes to which it is subject—Advantage of approaching the periods of active treatment in the first stages—Advisability of separating them later—Different modifications already proposed in this programme—Estimation of the results given by this method—Four indisputable advantages—Successful results in the great majority of cases, but undeniable failures—Refractory syphilis—Syphilis with *parasyphilitic* manifestations—Review of some particular points in the method—(1) Manifest advantage in commencing treatment by a primary energetic course—How a primary intense course may retard the development of tertiary lesions till an advanced period—Clinical examples—(2) Necessity of maintaining the treatment during each course at a therapeutic point of intensity—Actual dangers of multiple courses in insufficient doses—(3) Appropriation of the mercurial preparations to the nature of the lesions and the morbid conditions—Is it advantageous to vary the composition of the successive mercurial courses? 278–290

CHAPTER XXVII

AUXILIARY MEDICATION

Diet—General hygiene—Moral hygiene—Prophylaxis of hereditary or acquired nervous predispositions—The most common and most grave dangers of syphilis concern the nervous manifestations—Manifestations of this kind especially affect subjects who are predisposed by acquired or hereditary erethism of the nervous system—Syphilis is chiefly a *poison for the nervous system*—Of all the organic systems, it is this which is most often attacked by tertiary syphilis—Statistics of the author—Does the actual treatment of syphilis, as it is usually carried out, take sufficient account of the dangers to which the nervous system is specially exposed by syphilitic infection?—Are there not special conditions to fulfill in a subject *predisposed* to the nervous lesions of syphilis by acquired or innate tendencies?—Study of these indications 291–300

CHAPTER XXVIII

CONCLUSION

Final advice to patients 301–303

PART II

THE PROPHYLAXIS OF SYPHILIS

CHAPTER XXIX

THE PUBLIC PREVENTION OF SYPHILIS

(*Report of the Paris Academy of Medicine in* 1887)

PAGES

The many dangers of syphilis—Social consequences—"Merited" and "unmerited" syphilis—Insufficiency of the present preventive measures—Necessity for safeguarding the public health more effectively than is done at present—Three kinds of preventive measures—Administrative measures—The dangers of prostitution—Public solicitation—Prostitution in Paris—Arbitrary administration—Necessity of a legal basis for the administrative supervision of prostitutes—Registration — Unregistered prostitutes — Hospitalization and treatment—Reforms in the teaching of venereal diseases—Lock Hospitals—The Saint Lazare Hospital—Prevention of syphilis in the army and navy—Resolutions of the Academy of Medicine 307–336

CHAPTER XXX

THE INFLUENCE OF SYPHILIS ON INFANTILE MORTALITY

(*Communication to the Academy of Medicine,* 1885)

The lethal effect of syphilis on the young—A factor in depopulation—Hospital and private statistics 337–346

CHAPTER XXXI

THE SOURCES OF SYPHILIS IN WOMEN

(*Communication to the Academy of Medicine,* 1887)

Statistics showing that out of one hundred cases of syphilis in women twenty-four are "unmerited" and nineteen are derived from the husband 347–354

CHAPTER XXXII

WET-NURSES AND SYPHILITIC SUCKLINGS

(*Lectures delivered at the Lourcine Hospital in* 1877; *and Report to Academy of Medicine in* 1891)

Contamination of wet-nurses by syphilitic sucklings—Absolute rule to forbid the suckling of a syphilitic infant by a healthy wet-nurse—

PAGES

Illusory guarantee of supervised suckling—Bottle-fed infants—Suckling by Syphilitic Nurse—Suckling by the goat—Duties of the medical man to the wet-nurse—Protection of the nurse—The infected nurse—Conflict between the nurse and the parents of the suckling—Duties of the medical man to society—Preventive measures—Dangers arising from nurses infected with syphilis; clinical example—Wet-nurses with syphilis in incubation—Certificates for nurses after having suckled a child 355–392

CHAPTER XXXIII

UNDER WHAT CONDITIONS SHOULD WE ALLOW OR REFUSE A WET-NURSE TO THE CHILD OF A SYPHILITIC FATHER?

(*Clinical Lecture, November*, 1896)

Responsibility incurred by the medical man in cases of this kind—Three orders of cases—In all cases which are uncertain as regards the safety of the nurse, the rule of practice is to refuse suckling by a wet-nurse 393–398

CHAPTER XXXIV

VACCINAL SYPHILIS

Comparison of human and animal vaccine—Constant insecurity with human vaccine as regards syphilitic contamination; absolute security only with animal vaccine 399–403

CHAPTER XXXV

SYPHILIS BY EXTRAGENITAL CONTAMINATION

Frequency of extragenital infection—Infinite multiplicity of localizations—Buccal chancres; dangers of kissing—Chancres of the nose, eye, face, ear, scalp, trunk and limbs—Contagion by biting, spitting, kissing—Direct and indirect contagion—Contagion by tattooing, skin-grafting, etc.—Mediate contagion by linen, towels, etc.—Contagion by latrines—Contagion by medical instruments and by nitrate of silver crayon—Contagion by razors and shaving apparatus—Glass-blowers' syphilis—Chancres of the breast; (1) from suckling syphilitic infants; (2) apart from suckling—Chancres of the hand; professional contamination in medical men and midwives—Medical contaminations 404–441

CHAPTER XXXVI

PREVENTIVE TREATMENT OF PATERNAL SYPHILITIC HEREDITY DURING PREGNANCY

(*Clinical Lecture, November,* 1898)

PAGES

Protection of a fœtus threatened with paternal syphilis by treatment of the mother during pregnancy, although healthy—Success of this mediate treatment—Method of procedure in such cases . . 442–451

CHAPTER XXXVII

THE PROPHYLAXIS OF SYPHILIS BY TREATMENT

(*Bulletin of the Academy of Medicine,* 1899; *and Report to the International Conference at Brussels for the Prophylaxis of Venereal Diseases,* 1902)

Insufficiency of present prophylactic methods—Necessity for other sources of defense—Rational prophylaxis by treatment—It is not by hospitals that syphilis can be treated and sterilized, but by a system of external consultations—System of dispensaries attached to hospitals and situated in different quarters—The venereological dispensary—Syphilis more often requires out-patient treatment than hospital internment—Substitution of individual and *tête-à-tête* consultations for the intolerable system of consultations in batches—The medical staff of these dispensaries—Centers for the teaching of syphilis and venereal diseases—Necessary reform in the teaching of venereology 452–461

CHAPTER XXXVIII

THE SOCIAL DANGERS OF SYPHILIS

(*Report to the International Congress at Brussels for the Prophylaxis of Venereal Diseases,* 1899)

Syphilis constitutes a social danger (1) by its damage to the individual; (2) by its damage to the family; (3) by its hereditary consequences —Society has the right to protect itself against the dangers of syphilis by measures of public prophylaxis—Syphilis not only attacks those who expose themselves to it, but also those who do not—It is the duty of society to protect the virtuous woman, the family, and the child against syphilis 462–483

CHAPTER XXXIX

THE LEAGUE AGAINST SYPHILIS (THE FRENCH SOCIETY FOR SANITARY AND MORAL PROPHYLAXIS)

(*Lecture at the Saint Louis Hospital*, 1901)

PAGES

The conditions which led to its foundation—Its aims and object—The frequency of syphilis in all classes of society—The insufficiency of present preventive measures and the lethargy of the public bodies which are supposed to carry them out—The three prophylactic methods: moral, administrative, and medical 484–495

CHAPTER XL

THE STERILIZATION OF SYPHILIS

(*Lecture at the Saint Louis Hospital.* 1900)

Sterile and fecund syphilis—The agencies of contagion—Special danger of the mucous patch—Treatment—Instruction of patients in the danger of the disease with regard to others—Hospitalization—Supervision of prostitutes and internment of those infected 496–502

CHAPTER XLI

INSTRUCTION OF YOUNG MEN IN THE DANGERS OF VENEREAL DISEASES

(*Report to the Society for Sanitary and Moral Prophylaxis*, 1901)

In academical centers should the pupils be enlightened on the dangers of venereal disease? and if so, to what extent and by what means? —At least one-tenth of venereal diseases are contracted during the academic age—Resolutions adopted by the Society for Sanitary and Moral Prophylaxis 503–510

CHAPTER XLII

ABOLITIONISM (ABOLITION OF STATE REGULATION OF PROSTITUTION)

(*Lecture at the Saint Louis Hospital*, 1902)

Historical survey—Abolitionism *versus* regulation—The arguments of the abolitionists—The English Contagious Diseases Acts in 1864—Mrs. Josephine Butler and the "great crusade"—The International Abolitionist Federation—Repeal of the Contagious Diseases Acts in 1886—Henceforth prostitution, and syphilis with it, regained its liberty throughout the British Empire—Reply to the abolitionists —Conclusion 511–530

CHAPTER XLIII

A DOCTOR'S ADVICE TO YOUNG MEN OF EIGHTEEN

(Pamphlet for public distribution)

PAGES

Address 531–551

APPENDIX

By George M. MacKee, M.D.

The Treatment of Syphilis—When Should Antisyphilitic Treatment be Instituted, and How Should It Be Continued—The Iodide of Potassium and Persalts of Mercury—Recent Advances in the Knowledge of Syphilis—The Animal Experiments—Immunity and Serum Therapy—Serum Diagnosis—Practical Importance of the Diagnostic Serum—Morphology of the Spirochæta Pallida—Occurrence of the Spirochæta Pallida—Staining Methods and Technic 553–593

PART I

THE TREATMENT OF SYPHILIS

THE TREATMENT OF SYPHILIS

INTRODUCTION

In the present volume I propose to study the treatment of syphilis. The importance of the many difficult and complex questions which this study involves is obvious, and no subject is of more practical interest. I also desire to draw attention to the fact that the study of this subject is not one of those to which much attention is given in hospital teaching.

In fact, what we learn at the hospital is the treatment of certain syphilitic lesions; *but this is not the treatment of syphilis.*

It is not the treatment of syphilis as a diathesis—as a chronic disease requiring treatment for several years. This is because at the hospital we only see and have to treat the episodes of syphilis, if I may use the term; because, when hardly cured, or even only relieved of their actual lesions, patients hasten to leave and disappear; because we have no beds to give (and if we had, would they be accepted?) to those who "have nothing more the matter," who are apparently cured, but in reality require prolonged treatment to end in cure.

At the hospital we obliterate the lesions, but nothing more. *At the hospital, in the actual state of affairs, we do not treat syphilis.*

For to treat syphilis is not only to attack and cure the manifestations of a day, or even of a period: it is also and especially to attack the disease as a whole, to attack it when patent and latent; to lay hold of its primary cause, the origin of its actual and future determinations. It is to institute, with this object, a treatment of long duration—almost chronic—which alone is sufficient to realize *preventive* effects—that is, to protect the patient against the future, and to safeguard not only himself, but his posterity.

This, I repeat, we do not carry out at the hospital at present; but soon I hope reforms may be made which will enable us to do so. But in private it is another matter. The patients who consult us not only require our treatment for the accidents of a day; they want to be treated, and ask to be cured. But it is for us to make them understand what syphilis is, and what should be the treatment; it is for us, by our advice and by our authority, to impose upon them the necessity for the amount of treatment which we judge to be required under the circumstances. If we do not always, or even most often, succeed, it is none the less true that our efforts in this direction are often crowned with success.

It is only in private that we have the possibility of treating syphilis properly, and that because we have to do, not with patients "of passage," as in hospital, but with permanent patients whom we can follow, and whose symptoms and treatment we can register, and consequently on whom we can judge of the effect of different methods of treatment for long periods. It is only in private that I have, for my part, undergone the apprenticeship of what can be called the treatment of syphilis; it is there only that I have learned what I know to-day. What I know, or, rather, the little that I know—for the subject is vast, and has hitherto hardly been scrutinized, ransacked, or gone deeply into, as it should be from this special point of view—I shall attempt to portray.

I have already pointed out that to treat syphilis is quite another thing to treating a syphilitic lesion. In order to treat a syphilitic lesion, it is sufficient to make the diagnosis and apply the remedy which experience has shown to be the best under the circumstances; while the treatment of syphilis, looked upon not as a lesion, but as a disease, is much more comprehensive and complex. The latter includes a number of most different questions, all difficult, controvertible and controverted. It even includes general questions of major importance, on which may depend the success or failure of treatment. I will mention a few examples.

Is there an abortive treatment for syphilis? When should the treatment of syphilis be commenced? Is it necessary only

to treat syphilis during the course of its morbid activity, or to treat it as well during the periods of quiescence? How should treatment be carried out—in a continuous or in an intermittent manner? When is there an indication to prescribe mercury? When is there an indication to prescribe iodide? At what period should mixed treatment intervene? Of the different methods of administration of mercury, which is the one to be preferred as a routine method of treatment? At what period and under what indications should treatment be discontinued? Is it useful, as a preventive measure, to resume treatment at intervals in the advanced stages of the disease, and this even in the absence of symptoms, etc.?

All these questions relative to the treatment of syphilis as a whole, and considered as a disease, are precisely those which I propose to consider in the following chapters.

I have not the pretension to decide all these questions and give a definite solution for each of them. But I propose to discuss them all, and explain the actual state of our knowledge concerning them, as well as what I have learned personally by an already long experience.

CHAPTER I

IS IT NECESSARY TO TREAT SYPHILIS?

At the very threshold of this exposition a primary question presents itself, which, if solved in one way, would make my task unnecessary, and render useless all that follows.

This question is the following: *Is it necessary to treat syphilis?* Is there any advantage in treating syphilis?

In fact, according to some physicians (in truth, very few in number), syphilis cures itself spontaneously, like other affections, which, when abandoned to their own evolution, die out and are cured without any intervention. It is only cured, they say, under the influence of time and treatment by the occurrence of "spontaneous depuration."

According to this doctrine, it would be to no purpose to try and attack syphilis by this or that therapeutic agent.

Again, according to the same authors, it is a dangerous practice to treat syphilis. They assert that to treat it is "to expose patients to harm," "to risk disturbing the natural course of the disease; to counteract its spontaneous tendencies by artificial disturbances; and, on the whole, to hinder recovery."

If these doctrines, these paradoxes, had not already been a hundred times condemned as constituting an offense both to common-sense and to clinical observation, it would be my duty to institute a searching examination and refutation; for, as you can well imagine, practical consequences of considerable importance are concerned. But, as a matter of fact, the case has been heard and judgment delivered. I shall, therefore, without entering into details, confine myself to a rapid survey of the chief considerations which have excluded and banished such heresies from science.

What arguments do these doctrines invoke in their favor?

They speak vaguely of syphilis which has remained "inoffensive," and become spontaneously reduced to a few unimportant secondary lesions, or even to the chancre only, without consecutive manifestations.

But, in the cases in question, has the syphilis been positively demonstrated? How many times in these patients has it remained inoffensive? Have these patients been observed for the time absolutely necessary to demonstrate their immunity—that is, for ten, fifteen, twenty, even thirty years, or more (since the possible danger from syphilis is not less than these long periods)? No! None of these essential guarantees is found in the facts which have been produced.

Moreover, these facts, even if authentic, are, in the light of general observation, absolutely exceptional. How many can be cited? For my part, I cannot produce a single one.

I do not wish to deny the possibility of these cases of so-called *abortive* syphilis, because we have no right to deny a fact for the reason that we have never seen it. But if this is even of rare occurrence, I must have had very bad luck in not meeting with a single example during forty years.

On the contrary, what I have seen, like every one else, and what I see every day, is this: cases of syphilis which are abandoned to their own evolution lead at first to a group of lesions, which, although not serious, are none the less important; and later on to more serious lesions, often grave, and sometimes fatal, constituting what is called *tertiarism*.

Does every case of syphilis left to its own evolution end in tertiarism? Here again I refrain from absolute affirmation. But I know hardly any examples of syphilitic subjects who, having abandoned their disease to its spontaneous evolution, have not, sooner or later, paid for their imprudence by some tertiary lesion, more or less serious. On the other hand, in my private practice I have met with no less than 241 subjects who, having undergone no treatment for their syphilis, having never absorbed an atom of mercury or iodide, have been affected with tertiary manifestations of divers kinds—I might say of every kind. Would a single practitioner in his own practice meet with 241 cases of this kind if syphilis was, as they have been

bold enough to say, cured spontaneously, "naturally purified by the forces of Nature"?

I could cite lamentable examples from these statistics, and will mention some of them to show the responsibility which medical men incur who trust the health of their patients to the caprice of the disease.

A young student, of good constitution and excellent health, contracted an indurated chancre, which was soon followed by slight secondary symptoms. Owing to indifference, he did not undergo treatment. Seven years later he was attacked with cerebral symptoms, which were attributed to "cerebral anæmia," and was only treated by hydrotherapeutics. The symptoms became aggravated, and finally cerebral syphilis was recognized, which ended in dementia and death.

One of our colleagues contracted syphilis. Imbued with the fantastic doctrine according to which the disease is naturally prone to spontaneous depuration, he took no treatment. At first he escaped with some slight symptoms. Four years later he was affected with choroiditis, which he obstinately regarded as of a rheumatic nature. Then occurred severe symptoms of cerebral syphilis, which had a fatal termination in a few months.

A young married woman contracted syphilis from her husband, who, "to avoid publicity," committed the folly of discarding all medical advice, and abandoned his wife to the dangers of absolute expectation. All went well at first, and only a few slight symptoms occurred, which subsided spontaneously. But ten years later gummatous lesions developed which, being still untreated, destroyed the whole of the soft palate, the pillars of the fauces, and part of the hard palate and pharynx.

A still more disastrous case with the same history. A young woman contracted syphilis from her husband, and was not treated (for the same reason). A few years later the following lesions occurred: Gummatous destruction of the soft palate; necrosis of the frontal bone; lesions of the bones of the nose, with multiple necrosis; ozœna, etc.; a horrible phagedenic syphilide which attacked part of the face, destroying half the upper lip and the whole of the nose.

A final example; for I should never finish if I enumerated all the cases of this kind which I have seen, and these only in private practice. A young man, aged twenty-one, of good physique, contracted syphilis, and was not treated. Eleven months later he was affected with paraplegia, which, after being carefully examined by several of my colleagues and by myself, was unanimously attributed to syphilis. Three enormous sloughs were rapidly developed on the sacrum and both trochanters. Death took place in the course of a few weeks.

This is how syphilis "purifies itself naturally," as some of our colleagues remark; this is the manner in which it terminates "under the healing powers of Nature alone"!

If a complement to this demonstration is necessary, I will take one from the *hereditary influence* of syphilis.

Every one knows how this influence manifests itself in the descendants of syphilitic subjects who are not treated, or only insufficiently treated. This influence is invariably fatal in the course of the first years of infection, and may be prolonged in a severe form in the advanced stages of the diathesis.

This results either in abortion or premature birth of dead or moribund infants, or in the birth at term of syphilitic infants, generally destined to early death.

This influence very often extends through a whole series of pregnancies. Thus, it is almost a matter of daily observation to see syphilitic women, or even healthy women, married to syphilitic husbands end their pregnancy two, three, four, five, six, or even seven times continuously, either in abortion or in the premature birth of dead infants, or infants doomed to early death.

Such things do not occur in patients who have been treated thoroughly and for long periods.

If there is one fact which is actually proved and irrefutable, it is that antisyphilitic treatment has essentially a corrective and neutralizing effect on the hereditary influence of syphilis.

Personally, I could cite several hundred observations concerning syphilitic subjects who, after undergoing thorough treatment, have married and become the fathers of healthy and good-looking children.

Every one has seen facts of this kind, and every one is now in accord in recognizing that these terrible calamities of numerous miscarriages and early deaths are only observed as the results of syphilis which has been neglected and abandoned to its own evolution—in fact, *untreated or insufficiently treated.*

If the least doubt could exist on this point it would be dispelled by another fact of clinical observation, which is admirably adapted for the demonstration which I am pursuing. This concerns cases in syphilitic families where it has been possible to compare the results of a series of pregnancies, some before and others after the intervention of treatment. What has been observed in cases of this kind is this: The pregnancies anterior to treatment terminate in a disastrous manner—namely, by abortions, still-births, and infants who die soon after birth; the pregnancies after treatment end in living children born at term. A number of cases of this kind have been published, and as examples I will cite the two following:

One of my colleagues contracted syphilis. He married after having undergone a very short treatment, or, more correctly, after being untreated. His wife, a healthy woman, became pregnant three times, and three times she aborted, without any apparent cause. He then became uneasy, remembered his former syphilis, and treated it thoroughly and for a long time. Three new pregnancies occurred, which ended with living, healthy children, now aged six, five, and four years.

Another fact of the same kind, the authenticity of which I can guarantee in all its details, relates to a family which I have treated for a long time, and whose smallest ailments have come to my knowledge.

In my early days I chanced to meet an old fellow-student, whom I had lost sight of for a long time. He related to me his troubles: "I am much distressed because my wife has just had a fourth miscarriage after being several months pregnant; all these miscarriages have been produced without any cause which I can explain, without any accident, without any fall or imprudence. It cannot be my fault, for, as you can see, I am robust and well constituted to have children. The fault must be with my wife, and although she is apparently strong and of good

constitution, I begin to think, to my great grief, that she will never bear me any children."

A recollection then came to my mind, and I replied: "But perhaps your wife, whom you accuse, is not responsible for these miscarriages, as you seem to think; perhaps you are the real culprit; for I remember, some years ago, in the Latin quarter, that you had syphilis, and did not seem to me to treat it in a proper way."

Although given at venture, this advice was followed, and specific treatment resumed with energy; for, after leaving me, my friend hastened to his chemist and laid in a stock of Ricord's pills, with which he gorged himself for a whole year. Fifteen months later his wife was delivered at term of a living child, who is now nearly forty years old. Since then she has had three other pregnancies, with the same happy result.

Here, therefore, there were four miscarriages before the intervention of treatment, and four normal pregnancies after the treatment. Comment is needless.

But further evidence shows that the demonstration may assume an almost mathematical precision. A provisional specific treatment has sometimes been known to temporarily prevent the effects of syphilitic heredity. Thus, it may suffice for the birth of a healthy infant of syphilitic parentage for the parents to have been under the influence of mercury *at the moment of procreation.* However singular such a statement may appear at first sight, it is none the less authentic, and results from the evidence of a certain number of carefully studied and irrefutable observations.

A good example is shown by the following case reported by Turkmann: A syphilitic woman commenced by having seven pregnancies, during which she was not treated. Seven times she gave birth to syphilitic infants, who soon died. Becoming pregnant an eighth and a ninth time, she was treated during these pregnancies, and each time a healthy child was born. A tenth pregnancy occurred, and this time the woman, regarding herself as cured, did not undergo treatment. She gave birth to a syphilitic infant, which died in six months. Finally, an eleventh pregnancy, in the course of which treatment inter-

vened, resulted in a healthy child.[1] This fact could not be more convincing if it had been invented theoretically to suit the requirements of the case.

Lastly, if we investigate the statistics and compare the proportion of infantile mortality due to syphilitic heredity in the case of subjects who are treated with subjects who are not treated, we find the infantile mortality of the issue of subjects who, having had the misfortune to contract syphilis, have had the good sense to be treated and the patience to undergo treatment for a long time is really very small. In the statistics which I have compiled on this subject and published elsewhere[2] it does not exceed three per cent.

But what is it among the indifferent and negligent, who have only treated their syphilis by expectation pure and simple? Under these conditions it becomes formidable. It is certainly rare nowadays to meet with subjects who, not having been treated in any way for their syphilis, have had the audacity to marry, in spite of the dangers of divers kinds which they introduce into marriage. However, there are rash and cynical persons of this kind, and, for my part, I have the records of fourteen such cases. This is the result on their children. These fourteen individuals, having communicated or not syphilis to their wives, became fathers forty-five times, and these forty-five pregnancies ended in the following way:

Living children (6 affected with syphilis).....	8
Miscarriages and still-births.....	29
Infants who died soon after birth.....	8
	45

That is to say, thirty-seven deaths out of forty-five pregnancies, or a mortality of eighty-two per cent. What a terrible proportion! Compare this with the mortality of three per cent. in subjects who have been treated.

If space permitted, I could, without exhausting the subject, mention many other examples of the same kind, all tending to

[1] *Gazette Médicale*, June 24, 1843.
[2] A. Fournier, "L'Hérédité Syphilitique," 1891.

show the dangers of syphilis when abandoned to its own evolution, and the beneficial effects of rational treatment, resulting in the attenuation, diminution, and even exclusion of part or the whole of these dangers. But further proof is, I think, unnecessary, and the preceding evidence should be convincing. Therefore I conclude the first part of the subject with the two following propositions:

1. When abandoned to its own evolution, to its natural tendencies, syphilis is essentially prolific in dangers of diverse kinds.

2. It results from general experience that these dangers may be attenuated, diminished, or prevented, if not always at least in the great majority of cases, by a system of medication forming what is called the treatment of syphilis.

On the whole, therefore, it is to the interest and advantage of patients to benefit by these therapeutic resources, and therefore it behooves us as physicians to treat syphilis.

CHAPTER II

IS IT NECESSARY TO TREAT EVERY CASE OF SYPHILIS?

We have not yet finished with the primary question under consideration; for, at the point we have arrived at in this discussion, certain "moderate" partisans of the expectant doctrine would intervene by saying: "Well and good; in a general way you are right, and as a rule it is wise to treat syphilis. But let us distinguish; there is syphilis and syphilis. There are cases of severe syphilis which may lead to the most lamentable catastrophes, even death. There are cases of medium severity causing serious accidents, which it is necessary to prevent. But there are also mild cases, limited to a few benign and ephemeral lesions, after which they remain quiescent, and which require no treatment, because they cure themselves. Let us be logical. Let us treat severe syphilis energetically and for a long time; there is no possible dispute on this point. Let us also treat cases of average severity; this is prudent and rational. But as to mild cases, let us leave them alone to be cured of their own accord; in these cases treatment is, at any rate, superfluous."

This is certainly a wiser and more medical programme than that of expectation pure and simple, applied indiscriminately to all cases. But let us discuss the said programme.

I would say to the partisans of this proposition, Have you any criterion which allows you to determine the quality of a case of syphilis in its early stages? Can you foresee what this or that case of syphilis will be after a period of ten, fifteen, or twenty years? Can you tell us, for example, "Here is a case of syphilis which will have its tertiary stage. Let us be cautious with it, and treat it accordingly"? Or inversely, "Here is a case of syphilis which will remain indefinitely benign; we have nothing to fear in the future. Let, it therefore, follow its own

course"? If you can reply categorically to these two questions (which, in reality, are only one)—that is to say, to institute on a solid foundation what might be called the horoscope of syphilis, or, in more scientific language, the *previsional diagnosis* of syphilis—we are disposed to accept your programme—that is to say, not to treat those of our patients in whom you prognosticate a benign syphilis; for we do not treat our patients for the pleasure of treating them, but with the object and hope of being useful to them, and we should willingly abstain from treating those who do not require our intervention. Therefore, let us see on what signs your estimation of the future eventualities of a given case of syphilis depends, for this is the whole question.

Laborious attempts have been made to elucidate this problem; numerous efforts have been expended in determining whether a case of syphilis in its early stage will, in the near or remote future, be benign or severe; destined to remain quiescent after a few initial lesions, or to manifest itself by some tertiary catastrophe.

It has been thought that the whole or part of the solution of this problem could be found in certain characteristics of the chancre: in its incubation; in the quality of the first secondary eruption and later outbreaks, etc. Thus, it has been said that syphilis which is benign and destined to remain benign is that which arises by contagion from a secondary lesion; which has a long incubation; which begins by a superficial chancre with little induration; which is manifested in the secondary period by a simple erythema or benign syphilide; which evolves in widely separated outbreaks of a benign character, etc. And inversely, that grave syphilis, or that destined to become grave, is that which develops by contagion from a chancre; which has only a short incubation; which is characterized by an ulcerated and much indurated chancre; in which suppurative and ulcerative eruptions occur in the secondary period, and are repeated at short intervals.

Such questions are obviously of the greatest practical importance, and require careful investigation.

1. First of all, is there any definite, or even common, relation between the *origin* of syphilis and its degree of intensity?

Has it been shown that all syphilis arising from the contagion of a chancre is necessarily severe? And, what is more important, has it been proved that all syphilis derived by contagion from secondary lesions is necessarily benign, both in the present or in the future?

For such a statement to be accepted it must be based on a considerable number of observations, and observations of long duration, allowing a comparison between syphilis derived from the chancre and syphilis derived from secondary contagion. But we may search in vain for observations of this kind, and we have not even the first elements of statistics of any importance on this subject. The doctrine which upholds this law of concordance between the origin and the intensity of syphilis is not always consistent. One of its partisans, for example, commences by insisting on "the relative benignity of syphilis transmitted by secondary lesions." Then, as a corollary, he mentions the peculiar gravity which syphilis assumes in nurses infected by their sucklings. "It appears to me," he says, "that in nurses infected in this way the disease is more severe, both by the form and extent of the lesions, and by its resistance to treatment and greater tendency to recur." But if there is one class of cases which is derived from secondary contagion, is it not that of nurses?

That the source of origin has some influence on the symptoms and intensity of syphilis is possible, but is not proved in the actual state of our knowledge. Opinions are not equally divided on this point, and the majority of syphilographers incline to the view that the origin of syphilis has little bearing on the intensity of its ulterior manifestations.

Rollet remarks: "I have come to the conclusion, and I believe this is the opinion which will prevail, that little importance should be attached to the origin of syphilis, and that more attention should be paid to the patient who is affected than to the one who has transmitted it."[1]

Personally, I have never seen any appreciable difference between syphilis derived from a chancre or from a secondary lesion. I can even affirm that the latter on many occasions has

[1] "Traité des Maladies Vénériennes," 1865.

presented a grave appearance with severe manifestations. For instance, severe syphilis is sometimes observed in the case of nurses and young married women, although in both cases this has arisen from the secondary lesions of a heredo-syphilitic suckling, or from a husband formerly contaminated in his bachelor days.

Moreover, the distinction we are considering is seldom found in actual practice. All physicians who have attempted to institute a comparison between the disease of the subject who transmits contagion and the disease of the subject who receives his contagion know by experience how difficult it is to prove the origin of a venereal infection.[1] Out of one hundred cases there are hardly ten which can be proved, and that for different reasons. For instance, patients have had numerous connections, and which of these connections can be incriminated? Or in the case of a married couple, one shuns observation, etc. Most of the women who attend our hospital do not know when they contracted syphilis, much less from whom they received it; and among the men of the world who form our patients, a great number have excellent reasons for not being any better informed on this subject.

In conclusion, there is nothing to be inferred with regard to the ulterior consequences of syphilis from the nature of the lesion which has transmitted the infection.

2. *Second Point.*—Is the gravity of syphilis, as has been alleged, in inverse ratio to the duration of incubation of the chancre? That is to say, does a chancre appearing a short time after contagion signify severe syphilis? and, inversely, does a chancre appearing at a long interval mean benign syphilis?

As a matter of fact, there is no definite knowledge on this point, and all that has been said on the subject is conjecture and hypothesis. I might add that, for *a priori* reasons, I have very little hope of ever seeing any sign of this kind furnish a criterion of any value for the prognosis of such a diathesis as syphilis.

3. *Third Point.*—Do the characters of the first eruption furnish any evidence for the future of the case?

[1] *Vide* A. Fournier, "Researches on the Contagion of the Chancre," 1857.

According to the late Dr. Diday, the first syphilide "gave a good idea of what the syphilis would be of which it marked the commencement." The same author added that it constituted "a first chapter, in which the entire work was faithfully represented, and clear to those who knew how to read. . . . If a single sign was given me to predict the special destiny of a man in whom syphilis was commencing, I would certainly choose this."

According to this, nothing would be easier to establish than the prognosis of the future of syphilis. If the first eruption on the skin consisted in an erythema only, without papules, squames, or crusts, the future of the disease would always be benign, and "spontaneous cure would be almost certain"! If, on the contrary, the first syphilide was papular, squamous, vesicular, or pustular, it would indicate a grave form of syphilis.

This proposition contains a small amount of truth, but a large proportion of error. It is certainly true that at the beginning of secondary syphilis an erythematous roseola has an actual prognosis which is less grave than that of an ulcerative syphilide. It is no less true that a tertiary form of tubercular or ulcerative syphilide occurring in the secondary stage constitutes an unfavorable sign, both for the present and for the near future. But this is all, and all other indications drawn from the nature of the first eruption are devoid of foundation.

In fact, one often sees cases of syphilis which, after more or less serious symptoms at first, become milder later on. On the other hand—which is more important—the benign onset of syphilis is no guarantee for the future. A patient may begin syphilis by a roseola, and end with the most severe lesions. To prognosticate for patients with a roseola a cloudless future is to give them false and dangerous security.

There are numerous cases in which severe tertiary lesions have occurred ten, twenty, or thirty years after the roseola, proving the permanent presence of syphilis in the organism. It is unnecessary to quote examples, since facts of this kind are common knowledge.

Therefore, the commencement of syphilis by a benign exan-

them, such as a roseola, in no way constitutes even a relative guarantee of security for the future.

4. *Fourth Point.*—Is any more confidence to be placed in the character of the number, form, dates of appearance, and intervals of the later eruptions?

No doubt multiple intense eruptions following each other at short intervals give evidence of a severe syphilis, requiring energetic treatment. However, they only certify a syphilis which is severe in the present, and do not necessarily bear on the future developments. Moreover—and this is the essential point—is the converse true? Do eruptions which are few in number, of slight intensity, and separated by long intervals, signify that the diathesis is attenuated, and that tertiaries are not to be feared? Certainly not. There are numerous cases of syphilis which end in severe tertiary lesions, without passing through an intermediate series of successive, severe, multiple, and subinvolutive outbreaks. The following is one example among many: I have under observation a patient, aged forty, suffering from cerebral syphilis. The only former lesions consisted of an indurated chancre, a papulo-squamous syphilide, syphilides of the throat, and adenopathy. Here, then, is a case of syphilis which may end fatally, after showing at first only a few benign manifestations.[1] This is not an unusual occurrence, and is a common fact of daily observation.

5. Lastly, do the characters of the chancre give any indication of the future severity of the diathesis? It has been said that grave syphilis follows extensive, ulcerative, and much-indurated chancres; and mild syphilis superficial erosive chancres which are slightly indurated.[2]

It is certain (although subject to numerous exceptions) that an extensive, ulcerative, indurated chancre, especially if phagedenic, is generally followed by severe secondary syphilis, with early and multiple lesions. Conversely, it is no less true that a simple erosive chancre, slightly indurated and of short duration, generally precedes eruptions of a superficial and benign character.

[1] This patient has since died, and the autopsy revealed syphilitic lesions of the meninges and brain.

[2] *Vide* Bassereau, "Traité des Affections de la Peau symptomatiques de la Syphilis," 1852.

But this is the limit of the legitimate inductions which can be drawn from the objective characters of the chancre. Any other previsional prognosis based on the chancre is only hypothesis and random prophecy, which is dangerous by the false security which it offers to patients. No doubt, after a severe chancre, it is well to look out for tertiarism; but it is none the less wise to look out for it in all cases and after all kinds of chancres. It is a matter of common observation that *tertiary accidents of the most severe nature often follow the smallest, least indurated, most benign, and most insignificant chancre.*

Moreover, the results of clinical experience are in accordance with the facts of rational prevision. From the theoretical point of view there is nothing unusual in the fact that a benign chancre should be followed by benign secondary eruptions, or a severe chancre by severe secondary eruptions. The chancre and the secondary symptoms are, in fact, phenomena which occur with a short interval, and which, consequently, attack the organism in the same state of health and in the same disposition with regard to the diathesis. That the organism, at a given moment, tolerates this diathesis well or badly, and suffers soon afterwards from lesions which correspond in pathological nature and gravity, is only logical; it ought to be so, and this result can almost be foreseen on *a priori* grounds. But has this concordance of initial diasthetic phenomena any further signification? For example, if the disease has been easily tolerated by the organism for a given time, does it follow from this that it will always be tolerated in the same way? Because it was benign at first, are we authorized to believe that it will remain so indefinitely? Because it has suspended its manifestations at a certain time, have we the right to conclude that it has become extinct for ever? Certainly not. There is nothing legitimate in inductions and suppositions of this kind, and the physicians who have uttered them have exceeded the limits of speculative induction, and have neglected the evidence of clinical experience.

On the whole, therefore, the chancre only signifies the *present* disposition of the organism, a disposition which may continue

to influence the *early* lesions of the secondary period, but which *in no way concerns the future.* The benignity of the chancre in no way constitutes an immunity or a safeguard against severe lesions at a remote period.

Such are the principal signs on which a previsional prognosis of syphilis has been based. None of them are of any real value, and none of them furnish information of any value on the future eventualities of the diathesis.

Most of these so-called signs rest on a theoretical basis, namely, that there should be a concordance in form and intensity between the initial lesions of the disease and those of a later period. If syphilis is severe originally, it is presumed that it should continue to be severe in its later stages; if benign at onset, it should remain benign, or even become extinct. But this theoretical relationship between the successive stages of the diathesis is not supported by observation, and *the present, with regard to syphilis, is in no way the mirror of the future.*

If we were only concerned with a question of doctrine, I should confine myself to pointing out the error; but it is more than this, for the theoretical error leads to practical consequences of considerable importance.

When syphilis is limited, in its primary and secondary periods, to a few mild lesions, we are involuntarily led to treat the patient in a less energetic and prolonged manner than under different conditions. Nothing serious has occurred and nothing serious will happen; it hardly seems worth while to continue the treatment. Treatment is thus stopped, and patients, by discontinuing their visits, generally spare us the trouble of deciding whether they require further treatment. But what often happens in these cases, supposed to be benign because of their benign onset, and prematurely abandoned to themselves, is that five, ten, or twenty years later they suddenly revive in the form of a tertiary manifestation, which is always serious and sometimes fatal. This is to a great extent due to the optimistic doctrine, which, by relieving originally benign syphilis of all future risk, leads to a temporary and insufficient treatment. The clinical truth, on the contrary, is that the initial benignity of syphilis does not in any way constitute an immunity in the

future; in other words, *syphilis which begins well may end badly.*

I appeal on this point to common experience. What physician has not observed severe tertiary lesions in subjects with benign specific antecedents; in subjects in whom the chancre was only an insignificant pimple; in subjects who only suffered from unimportant secondary symptoms; lastly, in subjects whose primary and secondary symptoms were, on account of their mildness, either misunderstood or unnoticed? As convincing evidence, I produce the following statistics:

1. Here are the statistics of one hundred cases of cerebral syphilis, taken at hazard from my case-books; in fact, the last one hundred cases in private practice. The following summary shows the antecedents of these one hundred cases, more than a third of which ended in incurable infirmities (hemiplegia, contractures, alterations in intellect), or even in death.

In 17 cases the antecedent syphilis was extremely benign, and reduced to a few lesions of a mild character.

In 54 cases the antecedent syphilis was benign—that is to say, composed of certain superficial secondary lesions, such as roseola, mucous patches, adenopathy, alopecia, etc.

In 22 cases the secondary symptoms were of medium severity; papular or papulo-crustaceous syphilides, palmar and plantar syphilides, ecthyma, onyxis, severe alopecia, iritis, osteocopic pains, headache, etc.

In 7 cases the secondary symptoms were severe, and manifested either by profuse suppurative eruptions or by an early tendency to tertiarism.

Thus, deducting the twenty-two cases of medium severity, which are without signification, we obtain the following result: Out of seventy-eight cases of cerebral syphilis, seven cases followed a secondary period with severe manifestations; seventy-one cases were preceded by benign secondary symptoms.

Therefore, the only conclusion to be drawn from these figures is that the original benignity of syphilis is no guarantee against the eventuality of severe ulterior accidents, especially against the gravest of these accidents—namely, those of cerebral syphilis.

If we go into details, we shall find that the analysis of some of the observations from which these statistics are drawn are essentially in favor of the view I am urging, because of the remarkably benign character of the symptoms which preceded the cerebral manifestations. I will mention a few examples.

A young man, of robust constitution and excellent health, was affected with severe syphilitic hemiplegia, which had only been partially improved by energetic treatment, and probably will never completely recover. The only specific antecedents were a small chancre two years ago, followed by a few buccal mucous patches.

Another patient had a chancre, a papular syphilide, and some erosions of the tonsils. In the seventeenth year of the disease he died of cerebral lesions, the syphilitic nature of which was proved at the autopsy. Two other cases were attacked by hemiplegia in the fourth and sixth year of the disease respectively; in one case the initial symptoms consisted in a chancre and roseola, in the other a chancre and a palmar syphilide.

Lastly, a young man, whom I have kept under observation since the beginning of the disease, was only affected with a chancre of the penis, followed, after two months, by a mucous patch on the tongue. Nevertheless, eight years after the onset of the disease he presented severe cerebral syphilis, manifested by the following symptoms: ptosis, diplopia, epileptic attacks, hallucinations, difficulty in speech, amnesia, intellectual incapacity, hebitude; in short, he is a hopeless case. What a contrast between the secondary period, with its mucous patch and the tertiary catastrophe! This is how syphilis may terminate which was originally benign.

I do not say that all syphilis which is originally benign is destined to tertiarism; I only say that syphilis of this kind very frequently ends in this way. I do not deny that syphilis which is originally benign may remain benign indefinitely, even in the absence of treatment. From time to time we meet with old subjects who admit having had syphilis twenty, thirty, or forty years ago, and who have never suffered, in spite of insufficient treatment. But the proportion of these cases compared with

those of precisely opposite kind is in my experience very small.

2. The second statistics are of a more general nature, and deal with the antecedents of tertiarism. I have endeavored to discover the original phases of cases which end in tertiarism; in other words, to find out whether syphilis which leads to tertiary manifestations commences with an unusually severe secondary period, or with one of average severity. With the object of solving this problem, I have compiled and analyzed a great number of observations on tertiary syphilis, the antecedents of which were known to me, with the following conclusions:

Out of a total of 1,664 cases, including all kinds of tertiary lesions, I have found the antecedents as follows:

Benign or very mild secondaries.....	1,424 times
Secondaries of average severity.....	131 "
Severe secondaries.....	45 "
Early malignant syphilis.....	64 "
	1,664

Deducting the last group of cases, which do not bear on the question, we arrive at the following results:

1. That tertiary manifestations may follow all forms of secondary syphilis, benign, medium, or severe.

2. That in the great majority of cases (1,424 out of 1,664) they follow secondary syphilis of a benign character.

In round figures, out of ten tertiary lesions there are nine which follow originally benign syphilis, as against one which is preceded by secondary syphilis of average or severe nature. Thus, *nine times out of ten tertiarism results from syphilis which was originally benign.*

This result is significant, and I refrain from any comment thereon. Let us now return to the therapeutic question from which this discussion originated.

It has been said: "To treat syphilis which is originally severe is good; to treat syphilis which at first shows serious symptoms is also prudent; but syphilis of benign onset should not be treated, for with this the present forecasts the future.

This form of syphilis is destined to die out naturally, and in this case treatment is at any rate superfluous."

But what have we just seen in the above statistics? That in any given case of syphilis we have no means of estimating the future gravity, of foreseeing what this syphilis contains in embryo for the future; that the initial benignity of syphilis in no way constitutes a guarantee of benignity for the ulterior stages; lastly, that in the great majority of cases tertiarism is derived from syphilis which was originally benign.

It is therefore logical to conclude that syphilis, even when having a favorable and benign appearance at its onset, may, nevertheless, be the origin of grave ulterior accidents, even threatening life. It must therefore be dealt with in the same way as syphilis which is originally characterized by manifestations of medium or severe character; in other words, it must be *treated.*

To leave syphilis untreated on the excuse that it is benign is to abandon a patient to the eventualities of a future which is unknown, but full of perils; it is to attempt a dangerous experiment, to commit a double error against good sense and the facts of clinical observation.

The answers to the two questions we have been discussing are, therefore, as follows:

1. It is necessary to treat syphilis.

2. It is necessary to treat it whatever it may be at its onset, in its benign forms as well as the medium or severe.

CHAPTER III

IS THERE AN ABORTIVE TREATMENT FOR SYPHILIS?

THE logical sequence of this exposition brings us to another problem which has lately been the subject of lively discussions in medical circles: *Is there an abortive treatment for syphilis?*—that is to say, is there a means of extinguishing syphilis *ab ovo*—of nipping it in the bud, as it were, in the same way as the development of a branch or a flower is arrested?

This idea of conjuring the ulterior manifestations of syphilis by attacking it at its origin has at all times haunted the minds of physicians. On this point there is abundant historical testimony. In 1514 Jean de Vigo wrote as follows: "It is necessary to destroy without delay the ulcerated nodules which are most commonly produced on the penis after contagion (chancres), and to destroy them by some strong remedy capable of killing them *in situ,* of destroying their malignancy, and of arresting the imminent diffusion of their poison in all parts of the organism."[1]

Again, J. L. Petit relates that he learned from his teacher, Corbis, the precept: "In cases of recent chancres on a prepuce which is too long or phimosed, to cut off the end of the prepuce, which avoids the necessity for severe remedies, since the virus has not yet infected the blood."[2]

According to Hunter, the chancre was a local affection. "There is but little danger of the constitution being infected, especially if the chancre has been destroyed almost immediately upon its appearance, as we may then reasonably suppose there has not been time for absorption."[3]

[1] Jean de Vigo, "Le Mal Français," 1514. Translated by A. Fournier ("Collection Choisie des Anciens Syphilographes").
[2] "Traité des Maladies Chirurgicales," 1774, vol. ii.
[3] "Treatise on the Venereal Disease," 1810.

Ricord, in 1856, expressed the same opinion: "The chancre, whatever its nature, is only at first a local lesion. Although it may become infective, its action is primarily limited to the region which it affects. The general infection is not an immediate and instantaneous result; it is an accident consecutive to the development of the chancre, and requires a certain time for its production. Why not profit by the interval which separates the chancre from the moment of infection, by destroying the focus from which the latter arises? Think what benefit may arise from the destruction of the chancre when, by destroying a chancre in course of induration, the constitutional infection is destroyed at the same time."[1]

However, the results of practice had so many times disappointed the expectation of the theory—that is to say, the chancre had been destroyed so many times without preventing constitutional infection—that the method of abortive treatment was abandoned, or even fell into oblivion, when the microbial doctrines entered on the scene and gave it renewed favor.

The reason of this revival is easy to understand. When syphilis was represented as the product of a virus—that is to say, something almost immaterial, intangible, and imponderable, "of which an atom is as deleterious as a ton"—it was difficult to explain how the destruction of the chancre could prevent absorption of such a subtle principle, capable of diffusing itself in the economy in the same way and with the same rapidity as a vapor diffuses itself in the atmosphere.

On the contrary, with the microbial doctrine the principle of syphilis is to a certain extent materialized. It has become microbial, and consequently the chancre has become the first lodging-place of a microbial family. It is from the chancre, their first colony, that the specific microbes emigrate, to extend, by a series of colonizations, through the whole economy. But, as the microbe is a living entity which must proliferate in order to colonize, and as it requires an appreciable time for proliferation, the diffusion of syphilis is not sudden or instantaneous. It requires a certain lapse of time, and allows the possibility of intervention.

[1] "Leçons sur le Chancre," second edition, p. 286.

On this basis it is argued that the chancre is the first station of the pathogenic microbe of syphilis, the infectious focus from which general infection spreads, and therefore that this original focus of infection should be attacked in time and obliterated as speedily as possible, and that in this way we may succeed in preventing the constitutional infection; also, that if we do not destroy the source of infection completely, we can probably attenuate the disease by diminishing the number of germs.

With this new way of regarding the intimate nature and pathogeny of syphilis, it was natural that more confidence was placed in the abortive method of treatment, and more attempts than ever were made in this direction during recent years. Many methods were devised to destroy the chancre, or to suppress it in one way or another, even with its satellite, the bubo. The number of observations recording destruction or excision of the chancre which have recently been published can be counted by hundreds.

And what is the result of all this? Has any progress been made in the treatment of syphilis? This is the question we have now to investigate.

Abortive Methods

The most diverse methods have been proposed and tried with the object of suppressing the chancre, or of preventing the diffusion of its morbid principle in the economy. In spite of their diversity, these methods may be divided into two chief groups.

In one it is attempted to invest the chancre so as to prevent infectious diffusion by closing the outlets by which the virus was supposed to invade the organism. In other words, it is attempted to blockade the chancre. The other method consists in attacking the chancre directly, either by cauterization or by excision. It is hardly necessary to say that the latter method is the only rational one; however, if only as a matter of curiosity, we may say a few words on the former.

It was proposed, in order to surround the pathogenic germ

of syphilis and confine it within the chancre, to divide the lymphatics arising from the region of the chancre. It is obvious that this could not be effected on the living subject, nor even on the cadaver.

Others thought to neutralize the virus or to kill the microbe by mercurial inunctions practiced between the chancre and the glands. They even spoke of blockading the chancre by mercurial injections, with the idea of saturating the route which the virus would follow to reach the lymphatic glands corresponding to the chancre.

Others had the idea of treating the glands, to bar the way of the virus at this point. With this object it was proposed to inject some microbicidal substance, such as tincture of iodine or a solution of mercury; or to open and scrape out the glands; or to excise them. The last of these is the only method worthy of attention. This also merits our attention from another point of view, for it constitutes a complementary procedure to excision of the chancre, which we shall consider shortly.

When it was proposed to extirpate the glands as an abortive method, the practical difficulties of such an operation were not sufficiently borne in mind. For example, in a case of a chancre of the penis it is necessary to extirpate the whole of the inguinal glands, for, as in all malignant affections, the principle is that of *all or nothing*. The object to be attained is to cut the communications of the microbe; if any are to be cut, they must all be cut. This being granted, let us consider the anatomy of the part, and we find, according to Sappey, that there are eighteen to twenty inguinal glands, some of which are very small and difficult to discover at an operation. It is true that all these glands do not correspond to the genital organs; but at an operation it is impossible to distinguish those which correspond from those which do not. As a matter of fact, what is proposed is nothing less than a dissection of the inguinal glands, as on the cadaver. Anyone who has performed this in the dissecting-room knows very well the time and trouble that it takes. But this is not all, for clinical experience tells us that the syphilitic chancre often has a double bubo, one in each groin. Therefore,

in order to cut all the communications of the microbe, it would be necessary to extirpate the glands in both groins!

We may add that the operation is performed in a dangerous region, because of the neighboring large vessels and the grouping of most of the glands at the point of entry of the saphenous vein into the femoral. These dangers may not deter skillful surgeons, but they are not to be disregarded.

All these difficulties could be passed over if the result of the operation presented a certain guarantee. But, by closing the lymphatic route, are we certain of having closed all the routes the microbe may follow? May not the microbe travel by the capillaries and veins? And in this case what is the use of barring one way when the others are left open? The method is, therefore, uncertain and essentially hypothetical in principle. Consequently, what practitioner would consent to risk an operation of this magnitude in view of such an uncertain result?

It is futile to dwell on this group of methods, which have never proved their value, which are only theoretical conceptions, and which cannot be used in practice.

The second class of abortive methods concerns the chancre directly, and this at first sight appears of much more importance. All these methods have the common object of suppressing the chancre as a receptacle for the virus or microbe, both as a focus of infection emitting infectious emboli, and as a *seminarium infectionis*.

Three methods have been used: (1) Cauterization; (2) a variety of cauterization which may be called specific; (3) excision.

1. Cauterization of the chancre has been effected in several ways: by chemical caustics such as the carbo-sulphuric paste of Ricord, Vienna paste, chloride of zinc, nitric acid, acetic acid, or acid nitrate of mercury; or by the actual cautery, the thermo-cautery, or the electro-cautery.

About forty years ago cauterization "did wonders," and no words were too enthusiastic to celebrate its benefits. It was said that cauterization of the chancre from the first to the fifth day after contagion prevented constitutional infection. But

what were these chancres which, when cauterized four or five days after contagion, were not followed by constitutional infection? They could have only been *simple chancres;* for it is the simple chancre only which appears four or five days after contagion; while the syphilitic chancre only begins to develop three, four, five, or six weeks after contagion.

In fact, nearly all practitioners have attempted this method, which is so simple and full of promise, and all, myself included, have been deceived.

Diday relates a series of cases in which he cauterized chancres at their commencement, when they only presented the appearance of simple sores. In spite of energetic cauterization, all these chancres became indurated, and were followed by syphilis.

(1) A small chancre of the glans of three days' duration. Cauterization with carbo-sulphuric paste; a few days later, an apparently healthy scar; six weeks later, secondary syphilis.

(2) Another chancre, dating two days. Cauterized for two hours with chloride of zinc. Chancre healed in eight days; six weeks later, secondary syphilis.

(3) Another chancre, dating only twenty-four hours. Cauterization with carbo-sulphuric paste. Secondary syphilis six weeks later.[1]

In these cases it might be said that cauterization failed to prevent infection because the chancres were too old in date. But Langston Parker cauterized a chancre of only *two hours'* duration without preventing constitutional infection. Another case is reported by Berkeley Hill concerning a man who ruptured his frænum during sexual intercourse. This was cauterized eleven hours afterwards with fuming nitric acid. The wound healed, but a month later the cicatrix became indurated and secondary symptoms followed.

Hundreds of similar cases could be quoted.

We can therefore conclude that cauterization of a syphilitic chancre, even in its earliest stage, is absolutely powerless to prevent constitutional infection.

2. A variety of this method, which may be called specific cauterization, consists in cauterization of the chancre with a

[1] *Gazette Médicale de Lyon*, 1858.

substance which not only destroys it as a chancre, but which also has the power of acting on the infectious elements which may exist apart from the chancre, and which may be in process of absorption. For this purpose a substance is chosen which is both a caustic and an antidote to the syphilitic virus, and which, when absorbed by the vessels, may follow the virus beyond the chancre.

Corrosive sublimate fulfils these requirements, being both a caustic and an antisyphilitic. As a caustic it destroys the chancre, and as a mercurial agent it neutralizes the syphilitic virus.

This idea, which is ingenious theoretically, and is supported by the successful results obtained by its action in malignant pustule, has been used by Hallopeau. Unfortunately, it only resulted in another failure, as is shown by the following observation:

A patient was affected, after an incubation of about a month, with a chancre of the balano-preputial furrow. The chancre was of five days' date, and already indurated, but there was no appreciable adenopathy. A thick coating of sublimate in powder was applied for thirty minutes. Four days later a similar application was made to the induration. A slough was formed, the induration persisted, but no adenopathy developed. The wound cicatrized, but about forty days later a roseola, with papular and mucous syphilides, developed.

CHAPTER IV

EXCISION OF THE CHANCRE

Chancres were long ago extirpated with a view to arrest syphilis at its origin, but on account of its failures this method was almost universally abandoned till, in 1877, an important article, written by Auspitz,[1] containing the results of thirty-three cases of excision of chancres, again drew the attention of syphilographers to this subject. Since then numerous cases have been reported, and in 1887 Crivelli [2] wrote a complete monograph on the subject, dealing with four hundred and fifty-four cases, mostly of recent date. Ehlers[3] also reported the results of five hundred and eighty-four cases in 1891.

Let us see what has resulted from these numerous attempts.

1. First of all, what is understood by excision of the chancre? Excision of the chancre is an operation which consists in separating from the organism the morbid tissues constituting the chancre. It was at first considered sufficient to remove it with curved scissors; but as this was followed by so many failures, a more extensive operation was performed, including removal of a large zone of the surrounding skin.

Under these new conditions excision of the chancre becomes a small operation requiring anæsthesia, either local or general. The chancre should be separated at its circumference from the surrounding tissues, and detached at its base from the subjacent tissues. It is essential to remove it entirely, and leave nothing

[1] "Vierteljahresschrift für Derm. und Syph.," 1877. This article was preceded by another by the same author in collaboration with Unna. Also Hüter, in 1867, published an article on excision of the indurated chancre, and other cases were reported by Coulson, Thiry, Lewin, Caspary, etc.

[2] Crivelli, "Early Signs of Syphilitic Infection considered as a Contra-indication to the Abortive Treatment of Syphilis" (*Archives Générales de Médecine*, 1887).

See also two excellent reviews on the question, published by Morel-Lavallée, *Gazette des Hôpitaux*, 1888; and Ricklin, *Revue de Thérapeutique*, 1892.

[3] Ehlers, "Extirpation of the Initial Syphilitic Lesion." Copenhagen, 1891.

behind. It is therefore necessary to go beyond the edge of the chancre by several millimeters; to dissect deeply under its base; to make sure that no morbid tissue is left behind; to suture the wound or dress it openly, with strict attention to antisepsis. It is also necessary to preserve from inoculation the parts exposed by the knife, for the secretions from the chancre may, in the course of the operation, contaminate the wound specifically. For this purpose the chancre may be destroyed first with the thermo-cautery before excision.

Excision of the chancre is thus a delicate operation, requiring removal of a large extent of surface, owing to the extension of the induration into the surrounding tissues. The method, therefore, is not applicable to all cases; for in some regions it is contra-indicated, owing to the mutilation it would cause. For instance, with a chancre of the meatus it would be necessary to resect part of the glans and the urethra; in a chancre of the frænum, the urethra would be perforated; the same applies to palpebral and labial chancres, etc. I have known a case of peri-ungual chancre in which the phalanx was amputated, but syphilis followed none the less.

On the other hand, if the chancre is situated on a part which can be resected without damage—such as the prepuce or labia minora—excision is easy.

2. The next point is, What are the results of this operation? Here we must distinguish between local and general results.

As regards local results, the wound heals quickly, and without complications in most cases. A cicatrix remains, of extent and depth proportional to the extent of the excision. Some authors have said that excision leaves no cicatrix; but how can an operation which necessitates removal of a piece of skin the size of a two-shilling piece leave no cicatrix?

As in all wounds of the penis, excision of the chancre is sometimes complicated by hæmorrhage; and this is sometimes a severe and general oozing, which is not arrested by the usual methods. I have notes of a case of excision of chancre which was followed by hæmorrhage of this kind, which was only arrested, after considerable loss of blood, by three applications of the actual cautery.

Sometimes there is reproduction *in situ* of the induration. A few days after removal of the indurated base of the chancre a new induration is produced under the cicatrix. Sometimes this is of greater size and hardness than the original induration. This is not an uncommon accident, and I have observed it several times. Sometimes a third induration may be reproduced after excision of the second one.

Excision of the chancre is, therefore, not always free from local complications. But these disadvantages are of minor importance compared with the main point at issue—namely, whether excision of the chancre will preserve the organism from syphilis.

Does excision of the chancre, when properly performed, suppress syphilis? Does it realize what has been called the "eradication of syphilis"? That is the question.

First of all, it has been irrefutably established that, in the excision of chancres carried out with the object of preventing constitutional infection, *the failures exceed the successes.* Thus, Crivelli, in his analysis of all the cases published up to 1886, gives three hundred and thirty-nine failures out of four hundred and fifty-four cases—that is to say, that syphilis developed in these cases as if nothing had been done. Ehlers, in an analysis of five hundred and eighty-four cases, gives four hundred and forty-seven failures. These statistics give the result of twenty-two or twenty-three per cent. of successful cases.

These figures, although not high, are at any rate encouraging, for one patient out of five appears to have been preserved from syphilis at the price of a slight operation. Even if the proportion of successful cases were less, this would make us enthusiastic partisans of the abortive method, if success could be realized in a certain number of cases, whatever this number might be.

But, unfortunately, it is not sufficient only to count the observations; as an old adage wisely says, they must also be *weighed.* But when we come to weigh the cases given as "successes" in the preceding statistics—that is to say, the cases in which excision of the chancre was not followed by constitutional syphilis—the most impartial critic is forced to admit that, for

the large majority, the cases in question do not demonstrate what is claimed for them. The proofs of this are as follows:

1. In the first place, what reliance is to be placed in facts cited by physicians who profess the doctrine of *unicism*—that is to say, those who regard simple chancre and syphilitic chancre as identical? Did these physicians, when excising the chancre, determine whether they were excising a simple or a syphilitic chancre? This did not trouble them; for them a chancre was a chancre, and all cases of excision of chancre not followed by syphilis were a success, in the sense that syphilis was not produced after the operation. For us, on the contrary, excision of a simple chancre has no value, because we know that this chancre, when not excised, will not be followed by constitutional syphilis.

2. In the second place, of what value are a number of other cases where excision was performed on chancres following contagion by a few days—from one to twelve days, for example? These chancres of short incubation are given as successful cases! But is it not now proved, both by clinical observation and by experiment, that the syphilitic chancre never follows contagion at such short intervals? It is the simple chancre only which appears from one to twelve days after contagion. The syphilitic chancre has a much longer incubation—three, four, five, or six weeks, or longer. Therefore we are authorized to doubt the syphilitic nature of these so-called syphilitic chancres of short incubation; and the fact that these chancres were not followed by constitutional infection after excision proves nothing in favor of excision. What were excised in cases of this kind is of little importance, and is not for us to determine, but they certainly were not syphilitic chancres.

3. What is the value of a number of cases where patients, after excision, were not under observation for a sufficiently long time to establish the proof of their immunity? Many times it is admitted that the patients were only observed for a few months, or weeks, or were even lost sight of soon after the operation. Of what value are such incomplete observations, when, in order to prove consecutive immunity, a supervision of six months at least is absolutely indispensable?

4. Lastly, it was only in exceptional cases that the syphilitic nature of the lesion excised was determined by examination of the subject from whom contagion was derived. And yet it was always assumed that the patient was liable to develop syphilis. Is not this evidence indispensable, and does not the absence of this control cast a doubt on the value of the observations? In the great majority of cases this point has not been considered, and it has simply been a question of excising a chancre. But what proof is there that the lesion excised was a chancre?

The syphilitic chancre has two chief characters—the induration and the satellite bubo. But these two characters only appear in the adult chancre—that is to say, a chancre of at least eight or ten days' duration. But it is not the adult chancre which is suitable for excision; it is the young chancre the excision of which may suppress syphilis. But the young chancre has no specific characters. At this age it has the appearance of a simple sore, and presents nothing of a specific nature in its shape, color, border, or base, nor in any of its objective characters. In the St. Louis Hospital museum there is a model of a syphilitic chancre at its fourth day, which was followed by constitutional syphilis. The characters of this chancre have been skillfully reproduced by Baretta, but show absolutely no specific signs, either in shape, color, or general physiognomy. It resembles exactly a simple sore, such as might be produced by cauterization. On the other hand, many simple sores of the penis or other parts sometimes resemble the syphilitic chancre. For my part, I confess that *I am unable to establish the diagnosis of a syphilitic chancre in its early stages.* If there are physicians who are skillful enough to solve such a problem, I am ready to begin again with them my syphilitic education. But perhaps they would find it difficult to tell us what signs they depend upon to recognize in such a positive manner a chancre of one, two, or three days' duration. The truth is that, in the great majority of cases, they have excised *without knowing what they excised,* and have regarded as chancres lesions which had not sufficient diagnostic signs.

I do not imply that all cases reported as successful excisions of chancre have been diagnostic errors, but I affirm that none of

them prove what has been claimed for them. There is not a single one which proves absolutely that excision has prevented syphilis. The question remains open, and requires further research. In order to prove the case in point, a certain number of observations presenting the four following guarantees are indispensable:

1. The first point to establish is that the subject who is supposed to have a syphilitic chancre has exposed himself to the risk of contracting syphilis. I do not propose that excision should be postponed to wait for the results of this confrontation, which may take some time to establish; I only mean that after excision the possible source of contagion should be searched for, if the observation is to have any scientific value.

2. In the second place, a classic incubation period is necessary. No observation can be conclusive unless the presumed chancre has been produced, after possible contagion from a woman affected with syphilis, under the conditions in which chancre is produced—that is to say, after an incubation of several weeks—three weeks at least.

3. In the third place, it must be proved that the patient has not had antecedent syphilis; that the actual lesion presents the usual character of syphilitic chancre; that it is not constituted by herpes, or by an inflammatory erosion, or by a simple chancre, or by a chancriform syphilide, or by scabies, or by ulcerative folliculitis, etc.

4. In the fourth place, the patient must be kept under observation for a long time—for six months at least—so that it can be irrefutably established that the subject affected with the supposed chancre has not presented after excision any syphilitic lesion, and this *in the absence of all specific treatment.*

This is the programme to be carried out in all its details in order to establish on a certain basis the authenticity of the abortive effects of excision. But, up to the present, there is not a single observation which satisfies the four conditions of this programme proving that a chancre excised with such guarantees has not been followed by constitutional infection.

In all the one hundred and thirty-seven cases where syphilis is said to have been aborted by excision of the chancre, there

is not one without a flaw. None of them are convincing, and none of them bear the significance which has been imprudently attributed to them. I will mention as examples three cases reported by Jullien.[1]

Jullien performed excision fifteen times, with twelve failures and three "successes." But what is the value of these three observations? In one the author admits that the patient had on the one hundred and third day "a suspicious sore throat." In the second case the chancre excised was of nineteen days' date, and without adenopathy; moreover, sublimate pills were prescribed! But a chancre of nineteen days' duration without adenopathy is probably not a syphilitic chancre. Moreover, why should mercury be given if the patient is assumed to be not syphilitic? In the third case the induration was reproduced after excision, and three months later a chancriform ulceration appeared on the frænum. These three cases, therefore, are obviously not convincing.

In fact, the only legitimate conclusion which can be drawn from the cases claimed as examples of aborted syphilis by excision of the chancre is this: It is possible that in some of the cases in question excision of the chancre, with or without extirpation of the glands, has arrested infection; but if this is possible, *it has not been proved.* On the whole, therefore, from the facts produced up to the present, it is equally impossible either to deny or to admit the abortive virtues of the method.

Unfortunately, this is not all; for there are two considerations which, if not entirely destroying faith in the doctrine of excision, at any rate diminish any confidence which may be placed in this method.

1. The first of these considerations is that in nearly all cases where it has been attempted to establish the probability of syphilis by confrontation excision has failed.

This is the case in six cases published by Mauriac, Gibier, Rasori, and Taylor. In these six cases the possible source of infection was investigated. Six women were examined who were supposed to have transmitted the contagion, and all six

[1] *Union Médicale*, 1891. See also Wickham, "On the Excision of the Syphilitic Chancre."

were found to be affected with syphilis—two with chancres, the four others with secondary lesions. This being ascertained, the lesions were excised on the assumption that they were syphilitic chancres. But all the six cases were followed by secondary syphilis at its usual date.

2. The second consideration is of a nature to discredit excision, as may be judged from what follows. It is the rule to excuse the failures of the method in the following way, which is certainly plausible from the theoretical point of view. It is said that excision fails because it is nearly always done too late—when the chancre is already advanced in age, indurated, and accompanied by adenopathy. But induration is equivalent to a certificate of acquired syphilis, and the bubo proves that the infection has penetrated the organism. Under these conditions, when infection of the organism has already taken place, it is almost futile to attempt excision; while if there is a chance of practising excision in the first few days or, *a fortiori,* in the first few hours of the chancre, before induration, and before glandular invasion, the disease might be killed in embryo, and infection prevented.

But excision has been performed, under these specially favorable conditions, during the first few days and even during the first few hours of the chancre. And in cases where it has been previously established that the lesion excised might be the result of syphilitic contamination, excision has always failed to prevent infection.

This is proved by the following cases: Mauriac excised a chancre of fifty to fifty-six hours' duration, the size of a pin's head, and not accompanied by adenopathy. This was excised freely, but was followed at the usual time by secondary syphilis. The same observer excised two other chancres dating from forty-eight hours, the size of a pin's head, and not accompanied by adenopathy. On the seventy-first day secondary syphilis appeared.

Lastly, in a case of Rasori's, excision was practised on a chancre *twelve hours* after its appearance. In this case the woman from whom contagion was derived was found to be affected with mucous patches of the vulva and the cicatrix of

a recent chancre. On the twenty-eighth day the patient in question discovered a red papule on the prepuce, which was immediately excised by scissors. At this time the chancre was not more than twelve hours old; but forty-eight days after the excision, at the classical date, a roseola and mucous patches in the throat appeared, as if the case had been left to its own evolution.

The same with a case reported by Taylor, in which extensive excision of a chancre of only twelve hours' date was followed on the twentieth day by adenopathy, and on the fifty-second day by secondary syphilis.

In a case reported by Brandes, ablation of a chancre of the penis, performed by circumcision *ten hours* after the appearance of the lesion, did not prevent infection.

After such facts as these we may almost consider the question as settled, for the possibility of earlier intervention must be rare. These cases are veritable death-blows to the abortive method, for if the method fails at such an early period of the chancre, what can be expected in any case? In the words of Ricord, "Even if we amputated the penis as soon as the chancre appeared, syphilis would none the less certainly follow."

I may here mention a few facts of an extraordinary nature in which excision of the chancre was practised, so to speak, even before it appeared, by ablation of the organ or part of the skin in which it would appear. There are a few cases in which the infected part was removed before the date when the chancre would develop according to the usual laws of incubation. But even in these conditions excision did not prevent infection, and general syphilis occurred *without a chancre*. The following case is an example of this kind:

A young man had a slight abrasion of the prepuce after coitus. A few days afterwards he learned on good authority that the woman with whom he had connection had recently communicated syphilis to two of his friends. The next day circumcision was performed, and nothing happened for more than two months, except slight glandular swelling, which was attributed to inflammatory reaction. Then a roseola appeared,

soon followed by divers secondary symptoms, and later on tertiary syphilis, for which I treated him.[1]

Hence excision of a chancre *which had not even developed* did not prevent general infection. Therefore failure occurs all along the line—failure of excision in the case of chancre already more or less advanced in age; failure in the case of chancre a few days old; failure in the case of chancre which has not yet appeared; this is the sum total of the results.

Is it that, in syphilitic contamination, the infection by the toxic principle is instantaneous, as in certain intoxications, such as hydrocyanic acid, where the rapid absorption is shown by sudden sideration of the organism? Or is it that, without being instantaneous, the infection is so rapid that it precedes the appearance of the chancre?

We cannot tell, for the mystery of syphilitic impregnation is still unsolved. At any rate, this impregnation is extremely rapid, for in certain cases of excision of the chancre when only a few days old evidence of neoplastic infiltration already diffused is found in the tissues around the chancre (Taylor, Tarnowsky).

For example, a small chancre, four days old, was extensively excised, and the surrounding tissue was carefully examined microscopically. For an inch beyond the chancre clearly marked histological changes were found, consisting in small-celled infiltration of the small vessels and lymphatics and the perivascular and perilymphatic spaces. In fact, the specific process was already extensively diffused in the organism by an infectious infiltration, invisible to the naked eye, but demonstrable by histological examination.

This gives a simple explanation of the failure of excision. In whatever way it is performed, excision of the chancre is always condemned to failure because it is necessarily too late, owing to the fact that during the first days, or perhaps during the first hours, an infectious atmosphere is produced around the chancre, which rapidly spreads and invades the organism, causing in a very short time general infection.

[1] An analogous case is reported by Gerber (*Therapeutische Monatshefte*, 1892); and by Mauriac, "Treatment of Syphilis," p. 450.

But I have not finished with the question of excision of the chancre, for there is still another point which requires attention.

It has been said that the method, although it is far from realizing what might theoretically be hoped, should not be absolutely condemned, because it may have an *attenuating* action. By suppressing the chancre it destroys a nest of infection, diminishes the number of microbes, and therefore attenuates the infection. In support of this hypothesis, a number of cases are produced in which the secondary symptoms following excision have been of a mild nature.

But these cases prove nothing, for the great majority of cases of syphilis begin with mild secondary symptoms, even when they show grave manifestations later on.

On this point Humbert remarks: "What I can hardly understand are the cases where it has been claimed that excision has caused attenuation of syphilis. In what way has syphilis been attenuated? Is it because the secondary symptoms are retarded? M. Jullien goes rather far when he asserts that the roseola appears mathematically on the forty-second day, and when it does not appear till the fifty-second day after the chancre, that this shows the benefit of excision. Is it because the secondary symptoms are few in number? But we often see similar cases apart from excision. These cases prove nothing, because they do not consider the future, and because we can never say that syphilis which is benign at first will not be serious later on. Syphilis may be typical or atypical, intense or mild, regular or abnormal, but there is no such thing as attenuated syphilis. It seems to be forgotten that the true gravity of syphilis does not depend on the date, extent, number, or duration of the lesions, but on their situation. I should say that a patient who is covered with syphilides, but otherwise in good health, may be regarded as having a more attenuated syphilis than one who, after an insignificant secondary period, develops later on a tubercle in the brain the size of a pea, which may kill him." [1]

Moreover, it is futile to open a discussion on these grounds, because the occurrence of severe lesions after excision has

[1] Société Française de Derm. et de Syph., 1891.

already been noted. Mauriac had a patient in whom syphilis appeared at first to be attenuated by excision, but was soon afterwards affected with ulcerating syphilides, and two years later with necrosis of the superior maxilla. In a case of Neumann's, excision of the chancre, with extirpation of six glands, was followed on the fifty-third day by macular and papular syphilides, and ultimately by severe tertiary lesions, gummatous orchitis, ulceration of the pharynx, gumma of the palate, and periostitis of the tibia. A patient of Klink's, after excision of the chancre, was affected with syphilides, and later on with paraplegia. In another patient excision of the chancre was followed by severe syphilitic manifestations, rupia, headache, albuminuria, and cerebral syphilis.

Therefore, the attenuation of syphilis as a result of excision of the chancre is purely chimerical. And it is impossible for any syphilographer to definitely determine whether the method is radically inert, or whether it is capable of giving any satisfactory result, for the two following reasons:

1. Because it has been attempted to settle the question by *a priori* reasoning in this way: Syphilis is caused by the chancre, and the chancre is only the expression of syphilis and the first of its secondary signs; therefore excision of the chancre is useless: it suppresses one of the lesions of syphilis, and that is all; it cuts off a branch, but it leaves the tree alone, etc.

Others reply that the chancre is only a local lesion—that it is the cradle of syphilis, from which arise the microbes which, by a series of colonizations, disseminate the infection; therefore excision of the chancre should suppress syphilis and constitute an abortive method. *Verba et voces.* These transcendental considerations do not advance the question a single step. Any one of us may, in his own inner consciousness, believe that syphilis is acquired or not with the chancre, but we are obliged to admit that we know nothing about it. And yet we pretend to decide a question of therapeutics on the grounds of pure hypothesis! Let us abandon principles and fine words and return to experimentation, which alone is capable of throwing light on this subject, as in all other questions of the kind.

2. Experiments have been performed badly. Excisions have been practiced without taking the trouble to determine whether there were plausible reasons for regarding the lesion as a chancre, so that, after observations which can be counted by hundreds, we are no further advanced to-day than we were at first. If we continue in this way, we shall be no more decided on the value of excision in ten years than we are now.

Again, even if the method is accepted on principle, it is not applicable to all cases. Good sense and experience agree in recognizing that there can be no question of an abortive method in certain stages of infection. Thus it is futile to perform excision when the induration of the chancre is already advanced, or where there is adenopathy; still more so when induration and adenopathy are both present. *A fortiori,* it is irrational to repeat excision after excision of the foci of induration which continue to be reproduced under the cicatrix of former excisions.

In the name of good sense, and as the result of clinical observation, there is only one class of cases in which the abortive method can be applicable—that is in the case of a very young chancre of a few hours' date, without induration and without satellite glands. It is only under such conditions that the method has any chance of success, and it is only in such cases that it has been apparently successful. I say "apparently," and nothing more.

Unfortunately, the above conditions considerably restrict the number of cases in which the method is applicable; for out of a hundred chancres, seen either at hospital or in private, there are not more than two or three which comply with these conditions. But if these conditions are fulfilled, excision should be practiced.

Although I am no great believer in excision, and place no confidence in it from what I have hitherto observed, yet I do not hesitate to say that, under the conditions which I have just defined, and in the actual state of our knowledge on this subject, the indication is to practice excision, and this for the two following reasons:

1. First, because it has not been definitely proved that the method is certain to fail. It is true that the results so far published are far from encouraging. In the Paris hospitals, for example, it has always failed, without any exception, and not one of my colleagues is disposed to plead by experience for the cause of excision. As Humbert has well remarked, "the number of failures observed after excision of the chancre would be quite incomprehensible if the chancre was in reality, as certain physicians claim it to be, a purely local lesion of syphilis." The results of the partisans of excision are far from encouraging, when we find that Ehlers, of Copenhagen, who has done the most work on the subject, concludes, after citing one hundred and thirty-seven alleged successes, that "the method is only capable of preventing general infection in certain rare cases," and recommends mercurial treatment even in successful cases! Such is the confidence placed in these so-called successes.

Nevertheless, I repeat that we have no right to condemn the method; and as it is at least rational in intention, we are not authorized to repudiate it—at any rate, when there is no local contra-indication.

2. In the second place, excision should be performed because we have a moral obligation to neglect nothing which may be of benefit to our patients. We have no right, however incredulous we may be with regard to the method, to deprive them of the benefit of the chance.

We cannot allow it to be said of us, either on the patient's own inspiration or at the instigation of an indiscreet colleague: "I have a chancre which my doctor might have destroyed, and spared me all the dangers of general infection; but he did nothing to arrest the disease, or give me the chance of being protected. He watched the development of my chancre, and allowed syphilis to take its course in my system, while he might have cured it at first. It is to my doctor that I owe my syphilis."

Therefore, under the suitable conditions mentioned above, I think the rule of practice should be excision of the chancre,

whatever our private opinion may be with regard to the probable results of this intervention.[1]

I may add, finally, that if we decide to practice excision, we should perform it so that the experiment may serve some useful purpose—that is to say, have none of the flaws or uncertainties which have hitherto destroyed the value of experiments of this kind. Both before and after the operation we should endeavor to obtain the necessary evidence to establish in all probability the nature of the lesion excised. In this way only shall we succeed in deciding the important question of the value of excision of the chancre as an abortive method.

[1] I have retained the conclusions which date from the first edition of this book. I might have formulated them more strictly; for after several years the abortive method has been no more successful, so far as I know, and has only given me fresh failures. Moreover, this method appears to have spontaneously died out, and nowadays is not even heard of. Nevertheless, it should not be consigned to oblivion, owing to the two considerations which I have mentioned.

CHAPTER V

THE GENERAL TREATMENT OF SYPHILIS

HISTORICAL SURVEY.—The variations undergone by the treatment of syphilis in different ages form a curious history. At the time of the invasion of syphilis into Europe, at the end of the fifteenth century, the new disease was looked upon by some as a Divine punishment inflicted on mankind on account of their sins, and by others as an epidemic of sidereal origin. This was a curious period, in which physicians refused to treat an unknown complaint of which they understood nothing. Hence the invocations to the holy saints, the pilgrimages, the fantastic recipes of empirics, which constituted the first treatment for syphilis.

Soon afterwards induction from analogy led to the trial of *mercury,* a remedy which had already been in common use for certain dermatoses. This remedy was naturally successful, and was received with much enthusiasm, but its excessive and ill-regulated employment led to disasters.

In the sixteenth century a new remedy appeared in the form of *guaiacum,* which, exalted by Ulrich de Hutten and Fracastor,[1] replaced for a time the old idol. After this divers remedies were tried, such as vegetable depuratives, sudorifics, purgatives, etc., to return to mercury.

In the eighteenth century mercurial treatment was on the point of finding its practical formula in the *method by extinction,* which, however, did not succeed in replacing the odious *method by salivation,* which was then in vogue. At the beginning of the nineteenth century treatment without mercury replaced for a time the older methods, under the influence of

[1] Works of Ulrich de Hutten. Translated by A. Potton, Fracastor, "Syphilis," 1530. Translated by A. Fournier.

Broussais. The year 1836 was marked by the application of *iodide of potassium* by Wallace to the treatment of syphilis in general, and by Ricord to the treatment of tertiary syphilis. After this followed the strange extravagance of *syphilisation*, which for a time stupefied the scientific world.

At the present time, profiting by the errors and successes of former times, the treatment of syphilis has been organized in a scientific manner: by studying the treatment suitable to each stage of the disease and to each morbid manifestation; by attacking the disease as a whole by a methodical treatment of long duration, with a view to safeguard both the present and the future, and preserve the individual and his progeny; lastly, by endeavoring to reach the disease at its origin by measures of public prophylaxis.

Auxiliary Medication.—The treatment of syphilis does not consist only in the administration of remedies which have been proved by experience to be the most useful for the cure of specific symptoms or lesions. It embraces all the indications which are necessary to relieve and cure a patient affected with syphilis. Although it is not impossible to meet with a patient exclusively affected with syphilis and presenting nothing but symptoms directly due to syphilis, this is not the usual state of affairs.

The subjects we have to treat for syphilis nearly always present, independently of their syphilis, a certain pathological individuality, which is eminently variable. For example, one is anæmic, another lymphatic, or perhaps scrofulous; one is a neurotic, another arthritic or malarial, etc. The same with habits, diet, and hygiene: some are alcoholic, and others suffer from excess of pleasure or overwork; so that most patients, for one reason or another, add to syphilis a morbid idiosyncrasy. But this idiosyncrasy in many cases influences the diathesis by creating morbid opportunities, or "factors in gravity"; in other words, by rendering the disease different to what it would be by itself, by complicating it and making it more intense and more harmful.

Therefore the suitable treatment for nearly all syphilitic subjects does not consist altogether in the administration of

exclusively specific remedies. This treatment has of necessity another series of conditions to fulfill, by reason of the individual peculiarities which may react on the principal disease. The treatment of syphilis, properly understood, is composed of the following three elements:

1. *Specific agents,* or antidotes to the syphilitic poison, acting directly on the disease.

2. *Auxiliary medication,* intended to modify the pathological dispositions which may co-exist with syphilis, and react on it in an unfavorable manner.

3. *Hygiene,* applied to the individual conditions of the patient.

Of these three therapeutic elements, the first is obviously the most important. In order to deal with syphilis, antisyphilitic agents are necessary. Nevertheless, under certain conditions, the rôle of the two other elements may preponderate, because it is the essence of these auxiliary medications to cure or prevent certain manifestations in which the purely specific remedies are insufficient.

I shall have occasion to return to this point frequently during the following pages. I repeat that the whole treatment of syphilis is not contained in the administration of specific agents. It does not consist only in a certain number of boxes of mercurial pills or bottles of iodide. It is more comprehensive, more complex, and more medical than that. To show the importance of this truth, I will give a few convincing examples.

For instance, in *secondary asthenia,* that curious condition of depression and general debility which is sometimes observed in the first stages of syphilis, especially in young women, manifesting itself by an asthenia of all the organic systems—digestive asthenia, with loss of appetite, indigestion, gastric intolerance, and intestinal inertia; circulatory asthenia, with soft and feeble pulse; nervous asthenia, with lassitude, inertia, and torpor; nutritive asthenia, etc. The aspect of patients affected in this way is more suggestive of pernicious anæmia or incipient tuberculosis than secondary syphilis.

In such cases mercury may be useful to attack the specific cause of these symptoms, but it requires association with

auxiliar medications and hygiene—namely, tonics and stimulants, sea air or mountain air, change of habits, exercise, massage, sulphur baths, and especially cold douches. It is the combination of these auxiliary measures, in cases of this kind, which helps to revive the vital forces and restore the depressed functions, which mercury alone is incapable of realizing.

Another example is *phagedena,* one of the most grave accidents which can occur in syphilis, which is sometimes refractory to the action of antisyphilitics. In many cases tertiary phagedena obstinately resists the most energetic specific treatment. In such cases we must renounce specific remedies, and have recourse to indirect treatment, with a view to correct the organic disposition which favors the phagedenic process. In this case, as in the preceding one, auxiliary medications and hygienic supersede specific treatment, and on them depends the cure, by modifying the soil, which has become refractory to the specific action. In this way phagedena which is rebellious to mercury and iodide will often be cured by a change to the country, or a change in habits of life and surroundings, or after hydrotherapy, etc. The following is a case in point which I observed with Ricord in 1856, and followed in all its stages:

A young medical student was affected with a severe serpiginous syphilide, which in three years had extended over the whole of the neck, the scalp, and face, and which, at the time when I first saw him, covered half the head. All kinds of treatment had been tried, to no purpose. The phagedena persisted, and from time to time fresh outbreaks occurred. Much to my surprise, Ricord suspended all treatment, and ordered the patient to the country, with simple dressings for his sores. At the end of four months the patient returned in much better health, but without any change in the lesion. Specific treatment was resumed energetically, and in six weeks this phagedena, hitherto so refractory, had healed. In my own practice I have carried out this procedure with success in cases of severe phagedena which had resisted specific treatment for years. This shows the value of auxiliary medications, which, under certain conditions, may become the principal ones.

Another example is shown by the action of bromides in the

treatment of certain syphilitic affections of the nervous system. There are, undoubtedly, certain nervous symptoms of specific origin which bromide of potassium helps to cure, or even which it alone is capable of influencing.

Hygiene.—The rôle of hygiene in the treatment of syphilis is incontestable, and it may render inestimable services in furnishing the means of preventing certain specific manifestations, by warding off causes liable to direct syphilis toward certain organic systems. For example, the prohibition of tobacco will diminish or even prevent the specific manifestations of the mouth which are so common in smokers. These are, in the secondary period, labial, lingual, and buccal syphilides, with frequent recurrences; in the tertiary period, sclerous or sclero-gummatous glossitis, the worst type of which, and the most rebellious and incurable, may be called "syphilo-nicotic glossitis."

Again, syphilis of the nervous system occurs chiefly in two classes of individuals—the overworked and the debauched. It is universally admitted to be especially common in subjects who fatigue the brain by excess of intellectual work, business worries, etc., also in subjects who exhaust their nervous system by a life of pleasure, and by excesses of all kinds—venereal excess, irregularity and dissipation, debauch, the excitement of gambling etc. Therefore, hygiene may play an important part in the treatment of syphilis by warding off to a certain extent causes of this kind.

Hence there are other things to do for a syphilitic besides administering mercury pills or iodide. The patient should be treated with regard to his predispositions and morbid tendency, his hereditary or acquired taints. His hygiene, habits, diet, and mode of life require supervision, in order to preserve him from the dangers to which he is liable on account of syphilis.

In this way should the treatment of syphilis be understood, a treatment which comprises three therapeutic factors—specific agents, auxiliary medication, and hygiene.

CHAPTER VI

SPECIFIC MEDICATION

By specific medication is understood a medication which is reputed to attack the cause or principle of a disease, a medication which in some way is directly curative. In this case specific medication includes the series of agents known as *antisyphilitics,* which are considered as true antidotes to the syphilitic principle.

The agents which have been regarded as specific since the origin of syphilis are almost innumerable. To mention them all is unnecessary, since the majority have only had an ephemeral existence.

The two great remedies are *mercury* and *iodide of potassium,* but a few others may be mentioned which are of historical interest.

1. *Guaiacum* was in vogue in the sixteenth century, and for a time supplanted mercury, but to-day it has sunk into oblivion, from which it should never emerge.

2. *Sarsaparilla,* unfortunately, has not been forgotten, and forms the basis of certain "antisyphilitic syrups," such as Feltz's decoction;[1] Zittmann's decoction,[2] which is still used in

[1] Composed of sarsaparilla, isinglass, sulphide of antimony. Contains traces of antimony and arsenic; sometimes with the addition of bichloride of mercury.

[2] There are two Zittmann's decoctions, the strong and the weak. (1) *Strong Decoction.*—Sarsaparilla, 375 grammes; boiling water, 24 litres. Digest for twenty-four hours. Add in a linen bag; alum, 45; mercury, 15; cinnabar, 4. Reduce to 8 litres. Add: senna, 9; aniseed, 15; fennel, 15; liquorice, 45. Dose, ½ litre night and morning. (2) *Weak Decoction.*—To the residue of No. 1 add: sarsaparilla, 190; water, 25 litres. Reduce to 8 litres, and add lemon peel, 12; cinnamon, 12; cardamom, 12; liquorice, 12. Dose, 1 litre in the middle of the day. From researches carried out at the St. Louis Hospital it was found that the strong decoction contained 4 milligrammes of metallic mercury in an uncombined state to the litre.

some countries; Vigarous' decoction;[1] Pollini's decoction;[2] Cuisinier's syrup,[3] etc.

3. *Sassafras.*—The three preceding substances constitute the famous "sudorific woods," formerly much in vogue in the treatment of venereal complaints.

4. Vegetable depuratives, such as soap-wort, chicory, borage, fumitory, hops, germander, hyssop, marjoram, lobelia syphilitica, lemons, oranges, etc., without forgetting opium, which had its day in the eighteenth century; and at a more recent period guaiacum, jaborandi, turpentine, chaulmoogra, cascara amarga, condurango, tayuya, etc.

5. Purgatives of all kinds, especially drastic purgatives.

6. Mineral waters (sulphur, arsenical, etc.), very useful agents as auxiliaries and tonics, but destitute of any special action in syphilis.

7. Numerous agents of mineral origin, such as gold, silver, platinum, arsenic, copper, antimony, thallium, hyposulphite of soda, nitric acid, ammonia, oxygenated water and bichromate of potash.

8. Antizymotic agents, such as carbolic acid, salicylic acid, thymic acid, creosote, etc.

There is no need to mention all the numerous methods which have been practiced at different periods, such as blood-letting, vapor baths, revulsives and derivatives, blistering, "tartarization" by antimonial plasters, vaccination, cure by inanition (dry diet), etc. These are only of historical interest.

To say that none of the above remedies have the least influence on syphilis would be overstepping the mark. Some of them may be useful as adjuvants in certain circumstances, but none of them have any true antisyphilitic action, and the slight

[1] Composed of sarsaparilla, senna, guaiacum, sassafras, iris, crude antimony, aniseed, cream of tartar, aristolochia, jalap, polypodium, fresh walnuts, white wine, and water.

[2] Composed of sarsaparilla, squills, walnuts, pumice-stone, antimony and water. "Scarenzio thinks that the efficacy of Pollini's decoction (a secret remedy) is the addition of a salt of copper. He therefore adds 10 centigrammes of ammoniacal sulphate of copper to 750 grammes of the decoction, or a smaller dose of ammoniacal bichloride of copper" (*Annales de Derm. et de Syph.*, 1870).

[3] Composed of sarsaparilla, borage, roses, senna, aniseed, sugar, white honey. Bichloride of mercury (15 to 30 centigrammes per 500 grammes of syrup) was often added. Under these conditions it may have been active.

action which may have been observed in some of them is so inferior to that of mercury and iodide that it need not be taken into account.

On the whole, therefore, as regards antisyphilitic agents proper, there are only two at our disposal—*mercury* and *iodide*.

As it is rational to examine a weapon before using it, so I propose to study these two remedies in themselves before entering into the details of their application to the treatment of syphilis, to see what action they exert on the organism, to study their advantages and disadvantages, and especially to examine the dangers which have been attributed to them.

CHAPTER VII

MERCURY

MERCURY was applied to the treatment of syphilis almost as soon as the disease appeared in Europe. Since then it has retained its position, subject to divers changes of fashion, being sometimes exalted, at other times decried, but generally regaining favor on account of its own virtues, as well as by the failure of rival remedies.

The position which it has attained in therapeutics after so many vicissitudes will always be maintained, for it has a powerful action on the disease—an action which has been disputed, but which is confirmed by all evidence, and cannot be ignored. At present we must regard mercury as the remedy *par excellence* for syphilis, the fundamental remedy which is the most powerful corrective or antidote we possess.

ACTION OF MERCURY.—The first point to consider is whether mercury may be harmful by adding another danger to that of syphilis. This is a practical question on which we are frequently interrogated by our patients; for, if there is one remedy more than another which has a bad name, it is mercury. Mercury is a detested and execrated remedy, the name of which is a bugbear—a remedy for which all classes of society, from the highest to the lowest, have a native horror and hatred. When we prescribe mercury to a patient, we may expect recriminations of this kind, which are, so to speak, stereotyped in the mouth of the people: "But you have prescribed mercury! Then good-by to my teeth, good-by to my hair. You will make a barometer of my body! And my bones will go rotten; for mercury remains in the bones, does it not? How will you get the mercury out of my body?"

All these ideas have their origin in a profound aversion to mercury, an aversion which we must admit was formerly deserved, and which survives nowadays as a relic of the barbarous treatment to which syphilitics were formerly submitted, when the virtues of the remedy were attributed to its salivating action, and when the unfortunate patients were condemned to continual salivation. The public of to-day bears malice against mercury in remembrance of the past.

The number of misdeeds with which mercury has been charged is almost incredible, to say nothing of assertions of medical origin. Not only has it been accused of inflaming the mouth and causing the teeth and hair to fall out, but a hundred other disastrous effects have been imputed to it. Thus it has been said to produce ulcerations, gangrene, severe lesions of the bones; numerous visceral affections, especially nephritis; phthisis, metritis, and abortion; stricture of the rectum; nervous phenomena of all kinds, such as tremors, pains, apoplexy, paralysis, hebitude, epilepsy, insanity, etc.; and, in addition to these local accidents, a still more pernicious general action manifested by anæmia, emaciation, albuminuria, and cachexia. It has been described as "one of the most active agents of destruction of human health"; "an abominable poison to be shunned like the plague"; "a universal poison for animals, for the eggs of animals, for plants, and for grain." Again, "what has been designated under the name of cerebral syphilis would be better called cerebral mercurialism."

But this is not all, for it has been said, but for mercury, "constitutional syphilis would not exist"! This is no exaggeration, for Murphy attempted to demonstrate that mercury is the sole cause of secondary lesions, and Boerensprung never observed tertiary syphilis in syphilitics who had abstained from mercury! Herman also stated explicitly that "the lesions included under the name of tertiary syphilis are never the result of true syphilis; they are only met with in patients who have undergone mercurial treatment: they are exclusively the result of mercurial medication, or some other dyscrasia"; and as a practical conclusion, he proposed to present a request to the government to prohibit the sale of mercury!

There are errors and aberrations to which it is superfluous to reply, and those I have mentioned are of this kind. It has been demonstrated a hundred times that, clinically and anatomically, the lesions determined by mercury, and syphilis are absolutely dissimilar. Thousands of facts have been produced to show that symptoms or lesions which have been attributed to mercury have been caused by syphilis, and for the simple reason that these symptoms and lesions are observed in syphilitic subjects who have never absorbed an atom of mercury. Examples of this kind are the numerous cases of *ignored syphilis* which have remained untreated, and which abound in all the signs which certain of our colleagues attribute to mercury. For instance, alopecia, one of the manifestations for which mercury has been held responsible, has been shown to be common in ignored syphilis. Diday reported fifty-three cases of alopecia out of sixty cases untreated by mercury, and I could cite other examples of the same kind. I shall therefore not waste time in refuting these idle statements, which must be simply regarded as the errors of another age.

As a matter of fact, mercury, when administered therapeutically, never produces the symptoms which occur in miners, etc., and there is no resemblance between the accidents of mercury in medicinal doses and those caused by certain occupations. However, mercury, even in medicinal doses, has its disadvantages, and even its dangers. It is only active therapeutically, because it has a powerful influence on the economy. Therefore, it may be harmful if the limits of this influence are exceeded; and it is necessary to be well acquainted with its dangers in order to avoid them.

The evil effects of mercury may be divided into four classes: (1) Salivating effects; (2) gastro-intestinal disorders; (3) disorders of nutrition; (4) cutaneous lesions.

Salivation.—Mercury may affect the mouth in the form of mercurial stomatitis and salivation, and this is one of its most common effects, so that the fear of it is a constant source of anxiety for the physician who prescribes mercury. We could be much bolder in our administration of mercury if we had not constantly to reckon with the eventualities of these buccal

effects. In all cases these effects are painful and distressing, and sometimes even serious. Formerly intense stomatitis was caused by mercury, with ulceration of the mucous membrane, local gangrene, loss of teeth, partial necrosis and adhesions; but these accidents were due to the intense mercurialization which was then in vogue.

Unfortunately, there is no preparation of mercury and no mode of administration which is certainly free from accidents of this kind, and stomatitis may be produced by all the mercurial preparations. Every time a new mercurial preparation is introduced it seldom fails to be recommended on account of having no action on the mouth; then, after a sufficient trial, it nearly always has the same effect as the other preparations. It is the same whether mercury is administered by the stomach, by the skin, subcutaneously, or by the respiratory passages.

However, the severe cases of stomatitis with profuse salivation, ulceration of the gums, loss of teeth, and maxillary necrosis, do not occur nowadays; they are historical remembrances. Stomatitis of this kind occurred at the time when salivation was considered useful and indispensable in the cure of syphilis, in order to repel the germs of the disease. In the days of Astruc " a good cure required a good salivation of four or five pounds a day." Stomatitis of this severity was produced intentionally, and was regarded as a favorable omen, and mercurial treatment was synonymous with treatment by salivation.

But nowadays we do not see cases of this kind, for the good reason that, instead of provoking them, we do all we can to prevent them. Instead of treating syphilis by salivation, we treat it in quite another way, by the method of *extinction*. The stomatitis we observe now is only partial, and does not damage the teeth and maxillæ.

In the second place, we have the means of diminishing the buccal accidents of mercury, by choosing certain methods of administration, and especially by careful supervision. The popular idea that a subject submitted to mercury is necessarily condemned to salivation is a gross error. I estimate by experience that out of fifty patients treated with mercury and supervised by a careful physician, only one at the outside will have

stomatitis, and even then only of a mild character. Nowadays severe stomatitis only occurs under three conditions: (1) Owing to bad methods of treatment; (2) owing to exceptional circumstances, where the gravity of the lesions (cerebral syphilis, for instance, threatening life) has authorized the physician to exceed the limits of prudent mercurialization; (3) owing to negligence of the patient or the physician. As an example, I may mention the case of a woman who consulted three physicians for syphilis. One prescribed protoiodide pills; the second Van Swieten's liquor; and the third Gibert's syrup. Not knowing which of these remedies was the best, she took all three, and ten days afterwards came to me with an intense stomatitis, which she well deserved.

The buccal accidents of mercury may be prevented in the majority of cases by the following measures:

1. *Choice of the Remedy and Method of Administration.*—Experience shows us that all the mercurial preparations and all the modes of absorption of mercury have not the same tendency to cause stomatitis. For instance, in therapeutic doses protoiodide causes more salivation than sublimate.

The mode of absorption is of still greater importance. Of all the methods of introduction of mercury into the organism, the most dangerous for the mouth is that which I shall describe later on as the method of massive injections. With a single injection of this kind there is a risk of producing severe stomatitis, sometimes gangrenous, and liable even to a fatal termination. The method of inunction is more liable to stomatitis than the method of ingestion, and has the disadvantage of producing a special form of stomatitis, which differs from the stomatitis caused by ingestion in its more sudden invasion, its intensity, and its diffuseness.

Therefore, when we have any choice, we should choose the method of administration of mercury which is least liable to cause buccal accidents. It cannot be denied that the salivating methods are sometimes useful, but they should be reserved for special indications, and should on no account be employed in routine practice.

2. *Hygiene of the Mouth.*—Mercurial treatment should never

be commenced without previously ascertaining whether the patient's mouth is in a condition to tolerate mercury. All mouths are not equal in their power of resistance to the action of mercury. Without speaking of idiosyncrasies, a mouth which is neglected, with inflamed gums, carious teeth, tartar, etc., is especially liable to mercurial stomatitis, and the latter generally commences round the carious teeth and inflamed gums.

On the other hand, a mouth in good condition, with healthy gums, as a rule tolerates mercury very well. The following case is a striking example: A young woman with syphilis obtained from a hospital forty protoiodide pills (five centigrammes). The same day, when drunk, she swallowed thirty-four of these pills. But this enormous dose of protoiodide only caused a slight stomatitis, probably because in this young woman the mouth and teeth were in excellent condition.

Hence the rule never to give mercury without previous inspection of the mouth. If this is found healthy, treatment may be commenced at once; but, in the contrary case, treatment should be postponed and the patient referred to a dentist, to have carious teeth filled, stumps extracted, and tartar removed, etc. In about a week the mouth will be ready to receive mercury. This precaution, to which little attention is paid in practice, is, nevertheless, essential. I have many times met with patients who "could not stand mercury," but who, after treatment by the dentist, could tolerate it well enough.

Secondly, in the course of mercurial treatment the state of the mouth requires careful attention, and the patient's mouth should be examined at each visit. Mercurial stomatitis is seldom generalized at first; it nearly always begins by partial gingivitis, which affects four chief types:

1. Inferior median gingivitis, which affects the lower incisors.

2. Peripheral gingivitis, which affects a carious tooth or stump.

3. Genial stomatitis, affecting the mucous membrane of the cheek opposite the last lower molar.

4. Retromolar detachment, which occurs usually in connection with the last. This consists in separation of the gum behind

the last molar tooth, forming a loose projection which bleeds easily. This insignificant lesion, which is often not noticed by the patient or the physician, constitutes a sign of mercurialization and a prelude to stomatitis. Hence the retromolar region requires special supervision.

Therefore, during a course of mercurial treatment great attention should be paid to buccal hygiene, by rinsing the mouth after each meal, and by brushing the teeth night and morning with a soft brush and some dentifrice, such as the following:

(1)	Powdered charcoal.....	equal parts.
	Powdered cinchona.....	
	Essence of peppermint.....	q.s.
(2)	Powdered cinchona.....	āā 15 parts.
	Powdered cashoo.....	
	Powdered tannin.....	1 part.
	Essence of peppermint.....	q.s.

Frequent gargling with chlorate of potash or the following mixture should be prescribed:

Spirit of cochlearia.....	℥i.
Tincture of cinchona.....	℥vi.
Tincture of cashoo.....	℥iii.
Tincture of benzoin.....	℥i.ʒs.
Water.....	Oi.

The gums may also be painted with borax and glycerine, or with tincture of iodine when they are soft and chronically inflamed.

In the third place, the patient must be educated with regard to the buccal accidents of mercury. This is a precaution which is usually neglected, because of frightening patients who are already so prejudiced against mercury. This is an error, for in this case the patient must be his own physician, and should know when to suspend treatment on the first sign of stomatitis.

Patients should be informed that they are taking mercury, and that it may cause some irritation of the gums, but that they need have no fear of that if they leave off the treatment as soon as they feel any soreness. Many patients, in fact, suffer from

stomatitis because they are ignorant of the possible effects of mercury on the mouth. Not suspecting the cause of the buccal irritation, they continue treatment, which ends in causing serious lesions.

For example, a young man contracted syphilis, and, wishing to conceal it from his family, consulted one of the charlatans who advertise in public places. He was ordered mercurial pills, and a few days afterwards experienced soreness in the mouth. Thinking that this was another symptom of syphilis, he took three pills a day instead of two. The pain increased, and he took four pills a day. Finally, he came to me with intense, generalized, and ulcerative stomatitis, which lasted for five or six weeks. In this case the mercury was less responsible for the stomatitis than the "doctor," who had neglected to warn the patient of the possible effects of the remedy.

Lastly, mercurial treatment should be suspended on the least sign of buccal irritation. This is obvious, and is nearly always sufficient to arrest the morbid evolution.

Such are the different precautions which should be observed during mercurial treatment; and, thanks to these, this treatment may be carried out without much danger to the mouth. In our hospitals, where patients are constantly undergoing mercurial treatment, often of an intensive kind, mercurial stomatitis is exceptional, and when it occurs it is nearly always circumscribed, and yields rapidly to suspension of treatment. Cases of severe stomatitis almost invariably occur in patients who have not been supervised, or who have treated themselves. With the exception of these cases, severe stomatitis has nowadays become a rare exception in hospitals for venereal disease.

I do not say that we have abolished the salivating action of mercury, or that we are exempt from its buccal dangers; this would be an exaggeration. We sometimes cause more or less severe stomatitis, because we have to deal with patients in whom the bad state of the mouth renders them intolerant to mercury; because, in cases of extreme gravity, we sometimes have to prescribe mercury in dangerous doses; lastly, because there are cases of idiosyncratic intolerance of mercury which cannot be foreseen.

But I affirm that, except in these particular conditions, the harmful effects of mercury on the mouth may be nearly always prevented. And I affirm that they will be exceptional for every physician who makes a judicious choice of the remedy and of the method of administration; who measures his doses according to the tolerance of the patient; who keeps strictly to the programme described above; and, above all, who takes care to supervise the state of the mouth during the course of mercurial treatment.

Gastric and Intestinal Complications.—In many cases mercury is badly tolerated by the stomach and intestine. This is a matter of daily observation.

Thus, protoiodide and sublimate, the two most commonly used remedies, often cause pains in the stomach, colic, or diarrhœa. Their prolonged administration may also cause loss of appetite, gastralgia, or dyspepsia, sometimes ephemeral, but at other times persistent. In rare cases we meet with patients whose stomach or intestine are absolutely refractory to mercury. It is a peculiar thing, but absolutely authentic, that mercury, when administered by inunction or injection, may cause the same gastric and intestinal symptoms as when given by the mouth.

But should mercury be renounced on this account? Certainly not, for such a question could only arise if these accidents were inseparable from the administration of mercury; but fortunately this is not the case. In most cases mercury given by the stomach and *a fortiori* by inunction does not cause gastro-intestinal irritation, provided that certain doses are not exceeded.

Even when it causes troubles of this kind, they are generally only slight, and capable of attenuation, either by varying the preparation, or by combining it with some corrective, such as opium. It is for this reason that Ricord and Dupuytren introduced extract of thebaia into their celebrated pills. For the same reason the administration of mercury should not be prolonged beyond a few weeks. Experience shows that after a few weeks the strongest stomach may become fatigued by the remedy and even suffer some damage. This is an indication to suspend the treatment, and forms one of the bases of the *intermittent*

treatment which I have introduced into the therapeutics of syphilis.

If, in spite of all our efforts, it becomes evident that mercury given by the mouth irritates the gastro-intestinal system, some other method must be substituted. This is necessary in certain cases, but not common. Daily experience shows us that there are few patients who cannot take mercury, and even after some ephemeral gastric or intestinal symptoms they can generally be made to tolerate it by some artifice, such as by giving it immediately before meals, or even during meals.

I do not deny that there are some subjects who are intolerant to mercury, and that there are stomachs and intestines which are refractory to it; but I can affirm that these are very few compared with the great number of persons who tolerate it without evil effect.

Therefore, the possibility of digestive troubles as the result of the administration of mercury does not constitute a sufficient reason to contra-indicate the usage of this remedy in the treatment of syphilis.

Nutritive or General Complications.—This is a more important point. It has been said that mercury may produce disorders of nutrition; that it determines a toxic chloro-anæmia; that it causes emaciation and deteriorates the constitution; that it may lead to cachexia and marasmus by destroying the elements of the blood, etc.

Such statements contain a small amount of truth and a great deal of exaggeration. It is certainly true that mercury may determine a certain amount of languor, anæmia, want of appetite, fatigue, and emaciation, but almost exclusively under the two following conditions: (1) When it is given in large doses, which cause dyspepsia, colic, and diarrhœa; (2) when the administration is continued too long, even in moderate doses. As I have already pointed out, mercury is only tolerated for a certain time, after which the stomach or the intestine or the organism revolts against it. If mercury is then continued, things go from bad to worse; but if it is suspended, all the symptoms disappear in a few days.

But, apart from these two conditions, I affirm that mercurial

treatment administered in moderate doses and by the intermittent treatment, which I shall shortly describe, is tolerated by the organism without the least harm, without affecting the general nutrition, without fatigue, without emaciation, and without deterioration of health. And I affirm that it is tolerated in this way, not only by individuals of robust constitution, but by every one, by women as well as men, and even by children. I would even go so far as to say that there are few things which are so well borne by the system for a treatment of long duration.

And this is still more the case when the mercurial treatment is carried out at certain mineral springs. In the case of sulphur waters, for example, where the patients have the benefit of mountain air, exercise, enforced hygiene, tonic stimulation by douches, etc., the inunction treatment can be tolerated in considerable doses without any evil effect on the economy. This treatment, carried out at Uriage and Luchon and other places, constitutes an energetic resource for the leisured classes.

Dr. Doyen writes: "The treatment by mercurial inunction combined with thermal and sulphur treatment is generally well tolerated by patients. At Uriage I practice daily inunctions with six, eight, ten, or twelve grammes of mercurial ointment without causing intolerance. Stomatitis is exceptional. Under the influence of this treatment it is usual to see the general health improve at the same time that the specific symptoms disappear. I make a custom of weighing patients before and after treatment, and generally find a more or less considerable increase in weight after the treatment."

For several years I have also weighed my patients before and after each course of treatment, as well as at the beginning and end of a series of courses. Without going into figures, the general result has shown that mercurial treatment in moderate doses and by intermittent courses of treatment has no marked effect on the body-weight. It sometimes increases it, but usually leaves it *in statu quo*. I have very seldom observed any diminution.

Liégeois, who has studied the method of mercurial injections, found an increase in weight, with a normal condition of the

alimentary canal. He regards mercury when administered in small doses as a powerful restorative to nutritive assimilation.

Martineau undertook a series of comparative researches on three series of patients at the Lourcine Hospital, some treated by injections of mercuric peptone, others by the internal administration of the same peptone, and others by mercurial inunctions. In each of the three series he noted an invariable increase in weight and an increase in the number of red corpuscles.

Galliard[1] has shown that mercury has a tonic and reparative power in the secondary period, both on the number of red corpuscles and on the amount of hæmoglobin. He has also studied the action of mercury on the blood in cases of anæmia, apart from syphilis, and by treating them with daily doses of one to two centigrammes of sublimate, or ten centigrammes of protoiodide, found the appetite improve, the body-weight increase, and the hæmoglobin rise. He therefore concluded "that mercury may be compared to iron, and that not only in syphilitics, who could not have a better tonic, but in anæmics, who may sometimes derive benefit from it."

Again, Stoukovenkoff[2] and Jelenew have found that during the first part of a mercurial course (from one to sixteen injections of benzoate, for example), the amount of oxyhæmoglobin and of red corpuscles, which is generally diminished in syphilis, rises to normal, except in the case of complications, such as diarrhœa, etc. But if the treatment is continued, there is a fall in the number of red corpuscles and in the amount of oxyhæmoglobin. After cessation of treatment, however, these may return to normal in six or eight days.

The bearing of these curious results on the duration which should be assigned to successive mercurial courses will be referred to when discussing this method. At any rate, it is now shown, both by clinical experience and experimental observation, that when given in therapeutic doses and with prudence mercury is innocent of the harmful influence on nutrition and general health which was formerly attributed to it.

[1] "On the Action of Mercury on the Blood of Syphilitics and Anæmics" (*Archives Générales de Médecine*, 1885).

[2] "On Syphilitic and Mercurial Chloro-anæmia" (*Annales de Derm. et de Syph.*, 1892).

Cutaneous Complications.—Mercury may cause eruptions in two ways—by local irritation and by absorption. The mercurial eruptions resulting from topical applications are generally limited to local lesions, and will be studied with the treatment by inunction. We are only concerned here with the second class.

These cases of eruptions due to the absorption of mercury are certainly rare, but more common than was formerly supposed. They appear to be independent of the manner in which the mercury is absorbed, whether by ingestion, inunction, injection, or inhalation, and have even been known to follow cauterization with acid nitrate of mercury.

Most commonly they occur immediately after the first absorption of the drug, in the same way as the majority of medicamentous eruptions; sometimes they do not appear for several days; sometimes they appear only as a phenomenon of saturation, after several weeks. It is a curious fact that these eruptions are not, as a rule, accompanied by other signs of mercurial intolerance, such as diarrhœa, stomatitis, etc. That they are due to a personal idiosyncrasy is shown by the three following considerations:

1. There are certain subjects who cannot take mercury without cutaneous irritation. I reported some time ago the case of a patient who invariably developed a scarlatiniform eruption every time he took mercury; and this eruption occurred after protoiodide pills, after sublimate, after inunction, after a mercurial bath, and even after limited cauterization with acid nitrate of mercury.

2. These eruptions are less a matter of dose than of individual susceptibility, for they are often caused by a single pill or a single mercurial inunction. A curious example is reported by Englemann of a patient who developed a mercurial rash after inhaling the vapor of "Pharaoh's serpents" (sulphocyanide of mercury).

3. Recurrences of these eruptions nearly always occur in the same subjects after each new administration of mercury, sometimes with the same preparation, and sometimes with a different one.

The most common type is that of *desquamative polymorphous erythema.* They are very variable in objective characters and in clinical importance, which explains why they were for a long time unrecognized and confounded with other eruptions, such as scarlatina, measles, urticaria, eczema, erythema multiforme, erysipelas, commencing small-pox, and exfoliating dermatitis.

1. In a mild type the eruption is circumscribed and limited to certain regions, such as the groins and axilla, genital region, hand or wrist, and assumes the form of an urticarial erythema or an eczema, or a morbilliform or scarlatiniform rash, or an œdematous urticaria.

2. In a more common type the eruption, after having commenced by a few patches of erythema or eczema, becomes disseminated, and extends over most of the body, assuming different forms in different regions—namely, on the thorax and limbs that of an erythema, or a crimson rash resembling scarlatina, or an urticaria, or a morbilliform eruption; on the face that of an erythema, or an erysipeloid eruption, with swelling of the eyelids; on the scalp that of a dry seborrhœa; on the palms and soles that of a crackled erythema, sometimes with phlyctenoid elevations. In this way a polymorphous appearance is produced, which suggests a mercurial origin to the practiced eye.

After a few days desquamation occurs, which varies in character in different regions; it is powdery on the scalp and face, scaly and foliaceous on the trunk, and forms large sheets on the hands and feet, sometimes with " finger-stall " desquamation and occasionally loss of nails. In this stage the affection resembles exfoliating dermatitis, and I imagine that a number of cases of desquamating mercurial rashes have been included in the latter affection, or even that the type formerly described under the name of exfoliating dermatitis has been largely composed of unrecognized cases of mercurial dermatoses. At any rate, it is certain that, since we have understood desquamating hydrargyrism, we do not meet with exfoliating dermatitis.

3. In a rarer type the eruption is general, and the skin is red, swollen, and tense. Certain regions become the seat of

profuse scaly desquamation, while others are converted into large eroded placards covered with blisters resembling burns in appearance and odor.

In the milder forms the symptoms consist only in local heat and itching, with slight initial febrile symptoms, which disappear in a few days. But in the severe forms the symptoms may assume a graver aspect, with continual fever, anorexia, dryness of the mouth, vomiting, and diarrhœa; prostration, headache, and insomnia; delirium, dyspnœa, and symptoms of visceral congestion—in fact, a typhoid aspect, or, more exactly, the appearance of the last stage of severe burns. Such cases may be fatal. I have not observed a fatal case myself, but have seen a patient as near as possible to a fatal termination.

Apart from the last eventualities, which are exceptional, hydrargyrism must be looked upon as an important affection, painful and enervating on account of its pruritus, and lasting for a month or more. It is therefore one of the most troublesome consequences of mercurial treatment. Its greatest evil is the necessary abandonment of mercury, and the procedure to be adopted in cases of syphilis with serious symptoms is not easy to decide upon. Whether another preparation of mercury should be tried, whether the mode of administration should be changed, whether mercury should be replaced by iodide, or whether the suspension of mercury should be temporary or permanent, are all questions which experience has not yet decided, and which remain for further investigation.

It is needless to say that such a situation is embarrassing for the physician, as is shown by the following case: A young syphilitic woman was treated for several weeks with protoiodide, which was well tolerated; but after two mercurial inunctions, which she performed herself for pubic pediculosis, an intense mercurial eruption developed. Shortly afterward she returned with a papulo-tubercular syphilide, and was treated again with the pills, which were well tolerated on the previous occasion. But after the third pill the mercurial eruption returned, and she was treated with iodide. But this treatment, if it cures the present symptoms, will not cause extinction of the disease, and the critical situation in such a case is obvious. Fortunately,

however, such cases are only rare accidents in the course of mercurial treatment.

SUMMARY.—The accidents which may result from therapeutic doses of mercury may therefore be summed up as follows:

1. The disadvantages or even dangers resulting from mercurial exanthems. These cannot be prevented, because they consist in unknown, mysterious, and latent idiosyncrasies which cannot be foreseen. But these accidents are absolutely exceptional.

2. The disadvantages of buccal and gastro-intestinal intolerance. In the great majority of cases these can be prevented by the choice of a remedy or method of treatment, by doses adapted to individual tolerance, and by careful supervision of the effects of treatment.

3. The affections of general nutrition. These should be avoided by careful management of treatment, especially by the method of intermittent treatment.

CHAPTER VIII

THE THERAPEUTIC ACTION OF MERCURY

THE next point we have to consider is the beneficial effect of mercury in syphilis. Some have absolutely denied that mercury has any beneficial effect on syphilis; not only that, but they have even said that it aggravates it. These are the irreconcilables. Others, at the opposite extreme, have not sufficient eulogies for mercury, and regard it as the antidote and born enemy of syphilis. According to them, everything which is syphilitic must, *ipso facto,* be cured by mercury. Others, again, are more moderate in their views, and have the same confidence in mercury which should be accorded to a remedy of any kind, and, while praising its successes, they do not dissimulate its failings.

A question of this kind is of prime importance, and it is necessary to look at it from every point of view. We have two main questions to consider:

1. Has mercury a curative action on the actual symptoms of syphilis?

2. Has it an influence on syphilis as a whole and on its future?

THE CURATIVE ACTION OF MERCURY.—This is self-evident, and the cure of syphilitic lesions by mercury is a matter of daily observation. There are, however, skeptics who say that the action of mercury is an illusion, and that syphilitic lesions have a tendency to spontaneous cure. It is true that there are syphilitic lesions which are cured without treatment, but these are only in the minority. The evidence which results from long experience, and which is universally accepted by syphilologists, is this:

1. That syphilitic lesions which may be cured spontaneously are cut short in their evolution by mercury—for example, a

papulo-squamous syphilide will take months to disappear *sponte sua,* but will be dispersed by mercury in two or three weeks.

2. That a number of syphilitic lesions, instead of disappearing of their own accord, tend to terminate in the destruction of organs, and very often in death; and that lesions of this kind are in most cases cured by mercury.

Thanks to mercury, a syphilitic testicle may be saved from sclerosis, or functional death; a patient may be saved from impending death from cerebral syphilis; a heredo-syphilitic infant may be snatched from death. But cases of this kind are too numerous to require further mention.

Again, there are other cases which are still more striking, in which syphilitic lesions, after having remained for a long time undiagnosed and untreated, have begun to clear up as soon as a better-informed physician has taken them in hand and treated them with mercury. For instance, a neuralgia which, attributed to some other cause, has persisted for months; a psoriasiform lesion which has been treated as common psoriasis; a dermatosis which has been diagnosed as lupus, and has not yielded to treatment for years—if all these affections have been syphilitic, they will soon disappear under mercury. In cases of this kind the objection that they would have been cured spontaneously will not hold.

The Preventive Action of Mercury.—The second question to consider is whether mercury exercises an action on the disease as a whole and on its future—that is to say, whether it acts on the active principle of syphilis so as to modify, attenuate, and neutralize it, and thereby prevent future manifestations.

This influence of mercury has been much contested, and many physicians, while accepting the undeniable action of this remedy on syphilitic lesions, refuse to admit that it exerts any modifying action on the diathesis. In common parlance, they hold that mercury "whitewashes" syphilis, but does not cure it. In support of this view they mention the frequent recurrence of symptoms which have been temporarily cured by mercury.

On the contrary, we believe that the action of mercury is not limited to symptoms, but extends to the disease. We believe

that this remedy, on the one hand, cures the actual lesions of syphilis, and on the other hand, when administered for a long time and by the method which I shall shortly describe, exerts a general influence on the disease as a whole, an influence which I do not hesitate to qualify as curative. This opinion on a question of such importance is not a simple conjecture, but is based on clinical arguments which I shall proceed to discuss.

On *a priori* grounds, it is difficult to conceive how mercury, exerting an undoubted action on syphilitic lesions of all the systems, can possess this power if it does not influence the disease itself, which is the cause of these phenomena. I can understand that opium may relieve pain without acting on the cause of this pain, and that digitalis may relieve certain cardiac symptoms without modifying the valvular lesions of the heart; but I cannot understand that a remedy may moderate all the effects of a poison, and pursue this poison in all the organs which it may reach; that it may cure the successive and variable manifestations of a diathesis, without coming into conflict with the poisonous principle of the diathesis, the primary cause of these morbid phenomena.

The evidence showing that mercury exerts an action both on the present and future of syphilis is found in three considerations. The question is of major importance, since it affects the choice of two rival methods for the treatment of syphilis—namely, the *opportunist method* and the *preventive method.* These three considerations are as follows:

1. *Mercury exerts an Undoubted Preventive Action on the Manifestation of the Secondary Period.*—This is shown by comparing the nature of the secondary period in patients who have been treated from the beginning of infection with that of patients who are untreated or insufficiently treated. The nature of the secondary manifestations in the second class of patients is a matter of daily observation. These manifestations certainly are not dangerous to life, or even as a rule of a grave nature, but they are nevertheless troublesome, compromising, and sometimes painful. They include cutaneous syphilides of different kinds, from the roseola to the pustular or pustulo-crustaceous types; mucous syphilides of the mouth, tongue,

larynx, sexual organs, anus, etc., sometimes of real importance as local affections; onyxis and perionyxis; adenopathies, sometimes confluent, and in certain subjects liable to degenerate into strumous abscesses; more or less severe alopecia, causing partial baldness; secondary ophthalmias, some of which are serious, such as iritis, choroiditis, and optic neuritis; affections of the motor system, including ostealgia, periostitis, arthralgia, arthropathies, tenosynovitis, myositis; nervous phenomena, including headache, neuralgia, nervous asthenia; febrile symptoms, which sometimes assume the type described as secondary typhoid, etc.

On the other hand, in subjects who have been treated from the first, secondary syphilis is nearly always reduced to a few lesions of a superficial and benign character, such as a discrete roseola, a few mucous patches in the mouth, a few scabs on the scalp, with slight loss of hair, a certain amount of cervical adenopathy, and nothing more. Compare this with the usual type of secondary syphilis abandoned to its own evolution.

Secondary syphilis, when treated, is attenuated, and becomes an atypical or benign form of disease, compared with the more complete forms of the same affection. Occasionally the secondary symptoms may consist only in a roseola, and nothing else, and cases have even been reported in which they have been entirely absent when treatment was commenced *ab ovo*. Such cases are undoubtedly rare, but authentic and irrefutable.

The table on the following page shows the mildness of the secondary symptoms in twenty private patients whom I observed for long periods:

This table shows the power of mercury in attenuating the secondary symptoms, and it is difficult to conceive how mercury can have this effect except by acting on the principal cause of the disease. We may conclude, therefore, that mercury has an action on the disease as a whole, and a preventive action.

2. *Mercury exerts an Undoubted Preventive Action on the Tertiary Period.*—This is proved by the frequency of tertiary manifestations in syphilitic subjects who are not treated, or insufficiently treated, and by the rarity of these lesions in subjects who have been properly treated for long periods. I do not say that all untreated syphilis necessarily ends in tertiarism,

	Length of Observation (Years).	Symptoms observed in the Course of the Secondary Period.
1	10	Slight tonsillar syphilides on four occasions.
2	6	Roseola. Buccal syphilides twice.
3	8	Roseola. Buccal syphilides twice.
4	26	Buccal mucous patches twice.
5	10	Roseola. One mucous patch on glans and one labial.
6	8	Buccal mucous patches twice. A few erythemato-squamous patches on the forehead.
7	9	Roseola.
8	8	Roseola. One buccal mucous patch.
9	7	Erosive syphilides of tongue once.
10	5	Roseola.
11	6	Roseola.
12	15	Papular syphilide on face. Buccal mucous patches three times.
13	9	Roseola. Erosions of plans.
14	11	Buccal mucous patches. Erosion of glans twice.
15	15	Palmar erythema. Buccal syphilides.
16	8	Lingual syphilides three times.
17	5	Roseola.
18	9	One lingual mucous patch. Nothing else.
19	5	One papule on scrotum. Nothing else.
20	6	No secondary lesions observed.

for I have not the means of proving it; but I can affirm that syphilis, when untreated or insufficiently treated, very frequently leads to tertiarism.

Inversely, it is a matter of common observation that tertiary syphilis is rare in subjects who have undergone thorough and prolonged treatment, and all are agreed on this point. Ricord remarked that " tertiary lesions only constitute a rare exception after proper mercurial treatment," and this is the conviction I have been led to by my own personal experience. The following table shows the results of one hundred cases of cerebral syphilis of which the previous treatment was known:

STATISTICS OF 100 CASES OF CEREBRAL SYPHILIS

After thorough and prolonged mercurial treatment. .	5	cases.
After moderate but insufficient treatment.	6	"
After only seven to eighteen months' treatment. ...	10	"
After treatment from one to six months.....	70	"
After no treatment at all.....	4	"
After exclusive iodide treatment.	5	"
	100	

That is to say, that five per cent. only occurred after thorough treatment, as against ninety-five after insufficient treatment. It follows that cerebral syphilis is nineteen times more rare after proper treatment than after insufficient treatment. Mercury must, therefore, be regarded as a *preventive of cerebral* syphilis, and I could show by other statistics which I have prepared that mercury is no less powerful as a preventive against other tertiary lesions, such as gummata, visceral affections, lesions of the palate, nose, pharynx, etc.

Mercury thus has the same influence on tertiary syphilis as it has on secondary, by rendering it more mild and diminishing the frequency of tertiary lesions. In a considerable proportion of cases it prevents the grave lesions of the advanced stages of the disease.

3. *Mercury is a Preventive of Syphilitic Heredity.*—When abandoned to itself without treatment, syphilis manifests its hereditary influence by abortions, still-births, and the birth of puny infants infected with syphilis, and generally destined to early death; and these results are usually repeated during several pregnancies.

On the other hand, mercurial treatment corrects and neutralizes this hereditary influence in a most extraordinary manner. It is here that the preventive action of mercury is most evident, the infantile mortality being eighty-two per cent. in untreated subjects, and only three per cent. in those treated for long periods.

To resume: There are three sources of evidence which demonstrate the influence of mercurial intervention; in the secondary period, in the tertiary period, and in hereditary syphilis; and in each case it has been shown to exert a preventive action on the manifestations of syphilis.

Mercury cannot, therefore, be regarded as a simple "obliterater of lesions," as a "whitewasher" of symptoms. By some obscure mechanism it enters into conflict with the cause of the symptoms, and takes hold of the pathogenic principle, whether this be virus or microbe. It exerts an influence on the disease as a whole by which it not only cures the actual symptoms, but prevents the manifestations which, without it, will some day be

produced; and this preventive action constitutes the chief benefit of mercurial treatment. It is the preventive action of mercury which gives hope and consolation to patients, as well as constituting the ideal which the therapeutics of the physician should strive to realize.

In syphilis, everything depends on safeguarding the future, and it is with this ideal in view that the mercurial treatment of syphilis should be instituted, directed, and prolonged, according to a method which I shall shortly describe.

Objections to Mercurial Treatment. — There still remain some objections which have been raised against the mercurial treatment of syphilis, which I shall consider very briefly.

1. It has been objected that mercury does not prevent recurrences. Certainly, what are improperly called recurrences occur after mercurial treatment. No doubt a patient who is treated with mercury to-day for a chancre or for a syphilide may present new symptoms in six months or a year; but what is the value of this as an objection to mercurial treatment? We do not pretend to extinguish syphilis at one blow by the administration of mercury. On the contrary, we hold that if mercury influences and attenuates syphilis, it only achieves this result gradually and slowly by prolonged medication, carried out by a series of courses extending over a certain number of years. We know perfectly well that a syphilitic who begins to take mercury to-day for a chancre or a roseola is none the less liable to later symptoms, wrongly called "recurrences," which are only successive manifestations in the long evolution of the disease.

On the other hand, we know that these later manifestations are less common in subjects who are undergoing treatment than in untreated cases, and that when they do occur they are relatively attenuated in morbid intensity. During a course of treatment these "recurrences" are discrete and benign. For example, they take the form of superficial and dry eruptions at a period when the disease, if abandoned to itself, would be manifested by deep and suppurative lesions. They consist in partial and circumscribed eruptions formed of a few elements

only; they often occur as isolated mucous patches. In short, they are mostly insignificant phenomena which bear witness to the real attenuation of the disease.

2. The second objection is that mercury sometimes allows the production of severe lesions. It is unfortunately true that, in some patients, mercurial treatment, even when rigorously carried out, does not always prevent the occurrence of more or less serious manifestations. But this is rare, and investigation will show that the severe and fatal cases of syphilis usually occur after pure and simple expectation, or after irregular and insufficient treatment. This is shown by the following statistics based on 1,703 cases of tertiary syphilis of all kinds, mostly severe and some fatal.

THERAPEUTIC ANTECEDENTS OF 1,703 CASES OF TERTIARY SYPHILIS

No treatment at all.	217 cases.
Treatment for less than a year.	1,162 "
Treatment from one to two years.	265 "
Prolonged treatment (more than two years)..	53 "
Treatment for more than three years.	6 "

Thus, out of 1,703 cases of tertiary manifestations, 59 occurred after treatment which might be considered sufficient, and 1,644 followed either insufficient treatment or simple expectation.

3. Lastly, it has been said that mercury is not a *specific.* The word " specific " is one of those which every one interprets in his own way. If the term is reserved for all remedies exerting a direct and peculiar action on a disease or symptom, then mercury is a specific. But this is not the usual meaning attached to the term when mercury is said not to be a specific against syphilis. In this case " specific " has become synonymous with *infallible,* and the non-specificity of mercury has been taken as equivalent to its non-infallibility.

But we do not regard mercury as infallible. We admit its failings, and recognize that there are rebellious cases in which it fails to produce its usual effects. What we fear most is the exaggerated optimism which exalts it as a marvelous panacea, and the invincible enemy of syphilis. The strict truth is always

preferable to such panegyrics, and this truth is that mercury exerts a powerful curative influence on the majority of syphilitic subjects, but that in certain cases this influence is insufficient or wanting. Undoubtedly there are patients on whom mercury seems to have no action, in whom more or less serious symptoms continue to occur in spite of regular treatment—in whom, in fact, the diathesis persists in spite of all our efforts, multiplying and disseminating its lesions, pursuing its evolution as if it was bent on a fatal course, passing from the secondary to the tertiary stage, and sometimes even threatening life by grave visceral localizations.

Such cases are rare, but even if they were more common they would not constitute a reason for condemning mercury and banishing it from therapeutics. At this rate we should have few remedies left. Sulphate of quinine does not always cure malaria, and opium does not relieve all pain, nevertheless they are useful remedies. The same with mercury, which, instead of being rejected because it sometimes fails, should be taken at its true value, all the more so because we have no remedy to replace it, not even iodide of potassium.

CHAPTER IX

METHODS OF ADMINISTRATION OF MERCURY

THERE are four principal methods of mercurial administration:

1. *The method by ingestion,* which consists in giving mercury by the mouth, in the form of pills, solutions, or syrups.

2. *The method by inunction,* which consists in causing mercury to penetrate through the skin by friction with some mercurial preparation.

3. *The method by hypodermic injections.*

4. *The method by fumigation,* in which mercury is absorbed in the form of vapor, either by the skin or by the lungs.

With regard to the choice between these four methods, no absolute preference should be given to any one of them, for the simple reason that there is no remedy which suits every case. The choice of mercurial medication should not be based on theoretical considerations, but on clinical indications relative to the peculiarities of the patient and the quality of the disease, which are essentially variable and often impossible to foresee. The best method is that which is tolerated by the patient, and which has an active influence on the symptoms, and this can only be found by experience. Absolutism is out of the question, and the physician who has the interests of his patient at heart will approach treatment without prejudice and without any preconceived plan, and quite prepared to sacrifice his favorite method for some other which may be more adapted to the indications of the particular case. In severe cases there is no liberty of choice, and the most active and rapid method of mercurialization must be adopted, with the object of warding off impending danger. If there are no serious symptoms, it is sufficient to institute a milder form of treatment of long duration, with a view to act on the diathesis, which may even be

latent. Again, if the patient is dyspeptic, or subject to diarrhœa, the method of ingestion is contra-indicated, as it may increase the gastro-intestinal intolerance. In certain cases it may be necessary to prescribe several therapeutic agents simultaneously, and under these conditions mercury should be administered externally, leaving the stomach free for other remedies. There are also indications with regard to age. In young children the digestive functions must be respected, which are so vulnerable at this age, and mercurial inunction is better than ingestion at this period of life. Lastly, there are certain private considerations which may contra-indicate certain methods. For instance, if a married man wishes to be treated without the knowledge of his wife, mercurial inunctions will hardly be suitable.

Therefore, owing to numerous and diverse reasons, the choice of a method of mercurial administration cannot be determined in a general or abstract manner. The choice is subject to the necessities of practice, to special circumstances, and to individual considerations. In fact, everything is subordinate to the indications of the particular case, and these indications must always be obeyed.

CHAPTER X

THE METHOD OF MERCURIAL INUNCTION

Historical Survey.—This is the oldest of all the methods of administration of mercury. It was employed in the fifteenth century against the ravages of what was called the new epidemic, the *mal napolitain* or the *mal français,* and is mentioned by Fracastor in his poem on syphilis. But, administered in a reckless fashion, it caused the production of grave disorders and severe stomatitis, which soon led to a violent reaction against it. Gaspard Torrella in 1497 wrote: "Avoid, like the plague, these murderous ointments of charlatans, who have already made so many victims. It is they who killed Cardinal Segorbe. Alphonse Borgia and his brother owe their premature death to these ointments. Leave such remedies to the charlatans, who, if they escape just punishment on earth, will find it in eternity." [1] Ulrich de Hutten described the horrors of this treatment in a celebrated work.[2] Rabelais congratulated Gargantua on having relieved the sufferings "of the poor syphilitics, anointed to the point at which their teeth started like the keys of an organ when played on." [3]

The old treatment by inunction consisted not only in a series of rubbings with mercurial ointment, but in a series of diverse practices associated with these rubbings. It included *sequestration, overheating,* a so-called *depuration* by purgatives and even by bleeding, a *diet* sometimes equivalent to inanition, and, lastly, *salivation.* The combination of these five factors was considered indispensable to the treatment, which was carried out in the following way:

[1] "De Dolore in Pudendagra dialogus."
[2] Translated by Dr. Potton.
[3] Book II., Prologue to "Pantagruel."

First of all the patient was "prepared" by bleeding, purging, enemata, frequent bathing, prohibition of wine and all nourishing food, and, by way of compensation, gorging him with concoctions such as watercress, chicory, scolopendra, germander, chervil, pimpernel, etc., which were supposed to be endowed with marvellous virtues. After this preparation the patient was shut up in a closed chamber, in which the air was never renewed during the whole of the cure. This chamber was heated to different temperatures, according to different physicians, some converting it literally into a stove. Ulrich de Hutten relates a case in which three patients were suffocated in one of these "stoves." After this the rubbings were applied, while the patient was placed in front of a roaring fire.

The ointment used was not composed only of mercury and a fatty body, like those used at the present day, but was one of the complex preparations which were designed to fill the pockets of the druggist at that period. The celebrated *unguentum de Vigo* contained no less than eighteen substances—viz., pork-fat, oil of camomile, oil of anethum, oil of mastic, oil of laurel-bay, styrax, alder-root, dane-wort, rush, stœchas, euphorbium, aromatic wine, litharge, oliban, mastic, turpentine, white wax, and mercury. A physician who prescribed mercury without all these "correctives" would have been considered imprudent. With this idea a quantity of strange substances were incorporated in mercurial ointments to correct the malignancy of the mercury.

After the inunctions the parts were covered with tow or wool, and the patient put into a warmed bed with thick bedclothes, so as to induce perspiration. In the course of this treatment the patient was confined to bed in the fear that he would take a chill if he got up. This lasted for twenty to thirty days, during which time he was forbidden to change his linen so as not to lose any of the mercury. The result of this was that in a few days the patient, the linen, and the bedclothes, were all black, and the walls of the hospital wards in which the treatment was carried out were blackened with a sort of mercurial scum, so that they were called the "black chambers."

During the whole time the patients were kept on a restricted

diet, and were only allowed soups, beef-tea, yolk of egg, and rice, etc. On the other hand, they were drenched with a quantity of drugs under the names of lenitives, sedatives, solvents, and eradicators, which were supposed to evacuate the evil humors. Lastly, so that nothing should be wanting in this scene, enemata were ordered every four hours![1]

The patients, confined, overheated, purged, and ill-nourished, in this way soon became debilitated and emaciated. Some were reduced to a state of syncope, which, however, was regarded as a favorable omen. As a consolation, they were advised not to become discouraged, and to look forward to a speedy cure. They were even allowed to amuse themselves by conversation and music, but on the express condition of "putting a curb on their passions"!

The natural effect of inunction practised in this way was to cause severe salivation, which was called the "mouth flux," and this was looked upon as the sign of an early cure. For most of the physicians who at this time carried the humorist doctrine to its extreme limits, this salivation meant the expulsion of corrupt humors, and that the disease itself was evacuated by the mouth. Fracastor exhorted his patients in the following words: "A truce to the disgust which this medication may inspire in you, for this is the price of your cure. Therefore, spread this ointment on your body, and cover the whole skin except the head and the region of the heart. Bear this ordeal for ten days, the benefit of which will soon be felt. Soon, in fact, an infallible omen will announce the hour of your deliverance. You will soon feel the ferments of the disease dissolve in your mouth by an unclean slime, and you will see the virus evacuated at your feet in the saliva."

"Liquefacta mali excrementa videbis
Assidue sputo immundo fluitare per ora
Et largum ante pedes tabi mirabere flumen."
La Syphilis, Book II.

After salivation, opinions differed among the physicians as to further proceedings. Some were satisfied as soon as salivation

[1] Boerhaave, "Treatise on Venereal Diseases," 1753.

was produced, but others kept it up for thirty or forty days! They regarded a "good salivation" as one which, in twenty-four hours, produced five or six pounds of viscous saliva, and Boerhaave even considered that salivation should produce about one hundred pounds of saliva in thirty days! In this way patients spent their days and nights in slavering into a spittoon, which bore the name of "Casserole." Hence the popular term "passer à la casserole" for treatment by inunction.

Such was the treatment of syphilis by inunction even in the first third of the nineteenth century. At the present day it consists simply in a series of rubbings with mercurial ointment, combined with good diet and hygiene, and a total absence of the sequestration, sweating, bleeding, purging, even salivation, etc., of former days.

The uselessness of salivation in the treatment of syphilis was pointed out by Chicoyneau as long ago as 1718, and is now universally admitted. The depuratives, eradicators, solvents, etc., which formed the necessary accompaniment of inunctions, were slower to disappear, and the decoctions still exert a moral effect on patients, but medically they have had their day. The restricted diet, which by weakening the patients reduced their power of withstanding the disease, has nowadays given place to one of a more nourishing kind, which benefits the patients by counteracting the debilitating effects of the mercury. Lastly, sequestration and confinement in an overheated atmosphere, which weakened patients still more, has been abandoned. Nowadays, instead of confining our patients, we give them liberty to pursue their usual occupations, and recommend them to take moderate exercise in the open air.

Nevertheless, all the details which composed the old treatment have not fallen into disuse, and some of them still survive. For instance, foreign patients, especially Germans and Russians, have often told me that they had undergone the inunction treatment confined in a room, and forbidden to go out, and they have been thunderstruck when I prescribed inunctions and cold douches simultaneously. Yet inunctions and hydrotherapy are in no way incompatible, and in certain cases form a happy combination. Professor Charcot and myself

arrived independently at the conclusion that the best treatment for syphilitic epilepsy was by a combination of mercurial inunctions, iodide of potassium, and cold douches.

At Aix-la-Chapelle, where all Germany believes it is necessary to go for the cure of syphilis, sweating is still in vogue. Inunction is here performed in the course of the day after a bath, after which the patient is wrapped in blankets with a view to cause sweating. The same with diet. I could mention certain private hospitals abroad where the restricted diet is still adhered to. Such is the prejudicial respect for old traditions. With us, fortunately, the inunction treatment has become perfectly simple.

Modern Technique.—The usual ointment for inunction is the double mercurial ointment, called neapolitan ointment, which is composed of equal parts of mercury and lard. Lanoline may be substituted for the latter, and is said to penetrate the skin better than lard. Mercurial soaps are recommended by some and are said to be less dirty than inunctions with a fatty basis, and also less irritable. But they have the great disadvantage of requiring a considerable time for absorption, so that mercurial soaps and other preparations, such as the oleate of mercury and calomel, have not succeeded in replacing the old mercurial ointment.

Dosage.—The dose for each inunction varies according to age and sex and special indications. The average dose for an adult is a drachm, and this may be increased to one and one-half or two drachms, according to the tolerance of the patient. Larger doses should not be given except in severe cases where a rapid action is required.

Women are more liable than men to the salivating effect of inunctions, and a drachm is, as a rule, a sufficient dose. In infants, on the contrary, proportionally larger doses can be given, as there is no stomatitis to be feared, owing to the absence of teeth. From fifteen to thirty grains may be safely used in quite young infants, and even increased if well tolerated, and this dose is necessary to prevent the rapidly fatal effects of hereditary syphilis.

These are the average doses, but under certain conditions they

may be exceeded. In grave or rebellious cases, such as cerebral or spinal syphilis, for instance, from two to three drachms may be required daily. Also when treatment is carried out with sulphur waters this appears to increase the tolerance for mercury. At the thermal sulphur springs patients can tolerate treatment by inunction which under ordinary circumstances would cause severe stomatitis. Dr. Doyen, at Uriage, gives as a matter of routine daily inunctions of two, three, or even four drachms of mercurial ointment without causing stomatitis.

It is necessary that each rubbing should be made with a definite weighed quantity of the ointment, and not measured by such variable amounts as a piece the size of a pea or the end of the finger, etc. It is necessary to mention such details, as they are usually neglected. Excepting in severe cases, one inunction daily is generally sufficient, and the most convenient time of day is bedtime. This allows the ointment to remain on all night without causing inconvenience.

As regards the part of the body to which the ointment should be applied, opinions differ. Some recommend the trunk and limbs, others the palms and soles. The method of Larrey consists in rubbing in the ointment on the soles of the feet, which are covered with socks during the night. Inunction has even been practised on the penis and labia on the theoretical idea that the mercury should follow the course of the virus. Personally, I prefer the sides of the body, from the axillæ to the crest of the ilium, for two reasons—because the patient can easily perform the inunction himself, and because it offers a large extent of surface free from hair, which is an important consideration when large doses are used. Otherwise, I attach little importance to the choice of a region, provided the two following precautions are observed:

1. To avoid the hairy regions, such as the scrotum and axillæ, because inunctions practised in these regions rapidly affect the gums. Hence the frequency of stomatitis after the application of mercurial ointment for pediculi. In the axilla, the power of absorption is so considerable that it has been proposed to apply mercurial ointment in this situation without rubbing, the temperature of the axilla favoring absorption. But the region of

the axilla, like the groin and the pubic region, has the disadvantage of being very sensitive to the action of mercurial ointments, and seldom fails after a few days to cause cutaneous irritation, at first erythematous, then eczematous, and sometimes pustular. It has been proposed to avoid this by shaving the hairs, but I doubt if this would prove successful in preventing the mercurial eruption to which this region appears especially predisposed.

2. To vary the seat of the rubbings, because a series of rubbings practised on the same part often causes cutaneous irritation, due to mechanical and chemical influences.

To avoid this, the rubbings should be made on alternate sides of the body, or, if this is insufficient, these localities may be alternated with the inner side of the thighs and arms, as follows:

1st day. . . . . left side of thorax.
2nd day. . . . . right side of thorax.
3rd day. . . . . inner surface of left thigh.
4th day. . . . . inner surface of right thigh.
5th day. . . . . inner surface of left arm.
6th day. . . . . inner surface of right arm.

The actual rubbing is essential to the success of the method, for the skin will not absorb the mercury without mechanical aid in penetration. Probably the mercury penetrates by the cutaneous glands, and possibly it is transformed into a compound which is more easily absorbed. Moreover, the rubbing must be carried out " to dryness "—*i.e.*, till nearly all the ointment is absorbed. The time necessary to attain this result naturally varies with the dose, but at least ten minutes are required for a dose of one drachm.

The rubbing may be carried out by the patient himself or by a professional rubber. In the latter case the hands must be protected against absorption by gloves which are cleaned after each operation, otherwise the rubber is liable to mercurial stomatitis. Latterly, a glass rubber has been invented to replace the hand. This, although convenient, is not suitable for thin subjects.

After the rubbing the parts are covered with wool or wet lint, and the ointment is thus left on the skin for several hours, or during the night if inunction has been practised in the evening. After this the parts are carefully washed with soap and powdered with talc, starch, and rice powder.

The number of rubbings, the duration of the treatment, and the total dose of ointment to be used are not subject to fixed rules, and depend on several factors—the degree of tolerance of the patient, the effects produced, and the therapeutic effect which it is desired to obtain. One thing is certain, and that is that this mode of treatment may be continued for two or three months, under proper supervision, without any accidents.

However, it is prudent to discontinue it as soon as the gums are affected or the patient debilitated. The limit of tolerance varies in different subjects, and can only be determined empirically. In my opinion, inunction should be suspended after two or three weeks, and resumed after an interval.

In certain subjects, especially women, in whom the mouth is rather sensitive to mercury, the treatment must be interrupted from time to time to give the mouth a rest. In some cases it can only be carried out in periods of three to seven days, alternating with the same periods of rest. In this way the inunction treatment can be continued in cases which otherwise would not tolerate it.

The Mode of Action of Inunction.—The fact of absorption of mercury by the skin is proved in three ways: (1) By the appearance of mercury in the urine; (2) by the occurrence of the physiological effects of mercury, especially stomatitis; (3) by the production of therapeutic effects which are often intense.

With regard to the manner in which the mercury penetrates the skin, opinions differ, and four theories have been proposed to explain it: (1) mechanical penetration in a state of fine division; (2) absorption in the form of vapor by a kind of interstitial volatilization; (3) absorption by the hair follicles and sweat glands, and transformation by the fatty bodies of the ointment or the cutaneous secretions into soluble compounds;

(4) according to Merget, the mercury does not penetrate by the skin at all, but is inhaled after volatilization on the skin.[1]

Although this question is not definitely settled, it is known that mercury penetrates the skin in some way or another, because it has been found post-mortem in the skin of subjects who had recently been submitted to inunction, and also in the skins of animals treated in the same way. It is also known that mercurial globules introduced into the skin by rubbing disappear after a certain time. If the ear of a rabbit is rubbed with mercury, the presence of mercurial globules is clearly seen in a section of the ear; but if, after a time, a second section is removed from the same ear, no trace of mercurial globules can be found. It is hardly probable that these globules have disappeared by volatilization, and much more likely that they are absorbed *in situ* in some way which remains to be discovered.

The idea that the curative action of inunction is due to the volatilization of the mercury and its absorption by the lungs is based on the recently discovered fact that mercury is much more volatile, even at the ordinary temperature, than was formerly supposed. It has been shown that one part of mercury combined with two parts of carbonate of lime, and spread on a table, loses nearly one-fiftieth of its weight in twenty-four hours. But if the mercury was absorbed by inhalation, hospital patients who are not taking mercury would be mercurialized by their proximity to the other patients. But this does not occur, and although a certain amount of mercury spread on the skin volatilizes, and may be inhaled, this amount must be almost a negligible quantity.

Advantages of Inunction.—1. The chief advantage of the method is its active therapeutic effect. In many cases inunction realizes a curative effect which other methods have failed to produce. For instance, cases of tertiary sclerosing glossitis, which are usually rebellious to the usual forms of treatment, will sometimes yield to prolonged inunction. A good example of this kind is the case of a patient who consulted me three years ago for tertiary glossitis, which had already commenced to

[1] Merget, "The Toxic, Physiological, and Therapeutic Action of Mercurial Vapors," Bordeaux Thesis, 1888.

lobulate the anterior two-thirds of the tongue. As he was married, he obstinately refused to undergo treatment by inunction, so I treated him by other methods in energetic doses. This only caused temporary improvement, and after many relapses the patient consented to inunction. A course at Uriage with inunctions, which were pushed to three and four drachms of mercurial ointment, caused complete resolution of the glossitis, and the tongue is now cured.

2. The second advantage of inunction is the absence of gastric complications. Mercury, when administered by the skin, very rarely affects the digestive organs. This fact is of practical advantage in cases of dyspeptic subjects, in those liable to diarrhœa, in feeble subjects in whom it is important to support the digestive functions, and in young infants for the same reason. To give mercury by the stomach to an almost moribund newly-born syphilitic infant, whose life depends on the integrity of its digestive system, is to risk its life. It may certainly be made to tolerate a small dose of perchloride, but this dose is insufficient to save it. I have long ago emphasized the fact that young infants often only tolerate mercury in insufficient doses to allow them to live, and that their safety lies in inunction.

3. The third advantage is that inunction leaves the stomach free for the ingestion of other remedies. Thus, what is called the mixed treatment may be carried out by administering mercury by the skin and iodide of potassium by the mouth, while, if both remedies are given by the mouth, there is a risk of setting up gastric intolerance which ends in the suspension of all treatment. Again, the inunction method leaves the stomach free for auxiliary medication, such as bromide of potassium in affections of the nervous system, cod-liver oil, and tonics, etc.

Therefore, owing to these practical advantages, the method of inunction constitutes a mode of treatment from which much benefit may be derived.

Disadvantages of Inunction.—Unfortunately this method is not free from objections, and even dangers.

1. In the first place, it is a dirty and repugnant method, and also compromising. After the first symptoms have disappeared,

patients find the treatment too tedious and too objectionable to be tolerated. Social considerations are also against it, as it cannot be dissimulated. This mode of treatment stains the linen, and the servants, washerwomen, and everybody know what is going on.

2. In the second place, there are medical disadvantages comprising diarrhœa and mercurial dermatitis, which are rare, and stomatitis, which is common.

It is generally believed that mercury, when administered by the skin, has no action on the digestive tube. This theoretical induction is confirmed by experience in the great majority of cases; but sometimes it is found wanting, and there are cases where treatment by inunction causes frequent and liquid stools, abdominal pain, and colic. I have several times observed these symptoms in patients treated by inunction in the absence of any other causes, such as change of diet, exposure to cold, or previous intestinal irritability. After suspension of treatment all these symptoms disappeared.

This is probably an attenuated form of the intense dysentery which is one of the principal signs of mercurial poisoning, and of the dysenteric colitis which Balzer has observed after mercurial injections in animals. Several cases of mercurial poisoning, some fatal, have recently been reported in women after vaginal or uterine injections of sublimate, and one of the lesions found in these cases was ulceration of the large intestine. It is quite possible that mercury absorbed by the skin may determine the first stage of the intestinal irritation, which is manifested by colic and diarrhœa, but such cases are rare.

In some patients inunction after a certain time causes lassitude, muscular fatigue, pains in the limbs, and lumbago. For a long time I doubted the connection of these symptoms with the treatment, but more recently I have several times seen them reproduced in certain subjects during several courses of treatment of this kind.

A more common complication is mercurial dermatitis, which may be localized to the seat of inunction, or may be more generalized. This dermatitis has been attributed to the bad quality of the ointment, but I think it is more likely to be due

to an idiosyncrasy on the part of the patient. It may take the form of an *erythema,* which may be diffuse or in confluent patches, extending over the whole region of inunction. This disappears in a few days, and is followed by slight desquamation. In other cases there is *mercurial eczema,* which consists in a deep red diffuse area of erythema covered with confluent vesicles, full of clear fluid at first, afterwards turbid. This is accompanied by inflammatory swelling of the skin, local heat, and intense pruritus. This generally lasts only a short time, and is followed by slight desquamation. The treatment consists in suspension of inunction, starch baths, and starch powder.

In some cases, however, instead of a circumscribed dermatitis, a generalized eruption is produced, starting from the seat of inunction and spreading over nearly the whole skin. This is erythematous in some places and eczematous in others, and degenerates partially into an *exfoliating dermatitis,* which may last for weeks. It is sometimes accompanied by severe general symptoms, and has been described under the name of *hydrargyria febrilis maligna.* But this danger is not peculiar to the inunction method, and may occur with all the different modes of mercurial administration. Moreover, it is due to a rare idiosyncrasy.

Stomatitis.—This is the most common complication, and the stumbling-block in the inunction treatment. It cannot be denied that of all the therapeutic methods in usage for syphilis, with the exception of that by massive injections, the method of inunction is the most liable to cause stomatitis.

This stomatitis, moreover, is not the same as the common stomatitis which is seen after mercurial ingestion, and differs from this in three ways: (1) Its onset is more sudden, without the warning symptoms which I have described in the case of ordinary stomatitis; (2) it is more general, and instead of beginning in certain places, such as the retromolar region, like stomatitis after ingestion, it is extensive from the first; (3) it is generally more intense, with considerable salivation, swelling of the salivary glands, and ulceration of the gums. It is this form of stomatitis which produced the "good salivations" in

the days of Boerhaave, Astruc, and others. In fact, it may be called the malignant form of mercurial stomatitis.

It is far from my intention to decry the benefits which may be derived from the method of inunction, but it is necessary to point out that this method is never free from the danger of stomatitis, and that this may be produced from one day to another, in spite of the greatest care in supervision. The following example is a case in point: For some years I attended a patient of middle age and vigorous constitution for cerebral syphilis, which yielded to treatment. Several years afterwards there was a recurrence of cerebral symptoms, and I again had recourse to inunction, which had proved successful on the first occasion. I visited the patient and examined his mouth every day, but in spite of this there suddenly occurred one of the most severe stomatites which I have ever seen. In the course of a day the mouth became intensely inflamed, with ulceration of the gums, lips, and tongue, profuse salivation, and gangrenous glossitis. The tongue protruded from the mouth, and the whole of its upper surface sloughed away. The stomatitis took more than six weeks to cure.

Such a case is no doubt exceptional, but the preceding considerations result in two points of practical importance—viz., (1) that the treatment by inunction, on account of the accidents to which it is liable, requires particular care and supervision on the part of the physician; (2) that for the same reasons it should only be chosen in preference to other methods under certain special indications.

Another objection to inunctions is the *inequality of their action*. There are cases in which it works wonders, and others in which it is almost inert. This inequality of action is too commonly observed to be due to idiosyncrasy, and appears to be due to the mechanical conditions under which the treatment is carried out.

It is obvious that the effect of the rubbing will differ according as it is well or badly done, according to the extent of surface, the length of time, the vigor of the rubbing, etc. It may be urged that this is not the fault of the method, but of the manner of its application. This is no doubt true, but the distinction is

of little importance if these defects are nearly always inseparable from the application in practice. I take it for granted that out of twenty inunctions fifteen are badly or incompletely done by the patients, and destined to produce little or no effect. The method is not to be blamed for this result, but the result is none the less due to the inherent difficulties of the method.

In conclusion, I may say that I have perfect confidence in inunction when well performed, but I distrust inunction in general because I know that it is difficult to carry out properly, and that it is usually done badly in practice. I have more than once seen inunction produce no therapeutic effect when performed by the patient himself, while favorable results were obtained by a professional rubber. Therefore, inunction is only of value according to the way in which it is done.

Indications for Inunction.—We have now to consider whether this method is suitable as a routine form of treatment, or whether it should be reserved for certain particular cases.

In the first place, owing to its powerful therapeutic effect, the method of inunction is indicated in preference to other methods in the following conditions:

1. In severe cases, such as cerebral or spinal syphilis, visceral lesions, and syphilis of the eye threatening to affect vision.

2. In cases which are refractory to other methods. For instance, if a lesion has resisted other treatment, or if a lesion, such as tertiary glossitis, is known to usually resist other methods, recourse should be had to inunction.

3. In subjects who for different reasons, such as antecedent morbid states of the stomach or intestine, cannot tolerate the method of ingestion.

4. In cases where it is important to leave the stomach for the administration of other remedies.

5. In cases of syphilis in young patients.

Here, therefore, are five clear indications for inunction, but to treat syphilis by inunction in every case, as some physicians propose, is contra-indicated for the following reasons. As I have already pointed out, the treatment of syphilis does not consist in the temporary removal of symptoms, but in a course of treatment which aims at attacking the disease as a whole,

neutralizing its principle, and extinguishing it both as a diathesis and as a possible source of future accidents. But the extinction of a diathesis can only be realized by a treatment of long duration, measured by years. I repeat that syphilis can only be dominated and rendered indefinitely silent by an almost chronic treatment divided into successive courses during the first four or five years of the disease. In this way only can we expect to safeguard the future.

But if this long-continued treatment is necessary to prevent tertiarism, it is obvious that the inunction method is not suitable for this purpose. In the first place, it is not free from accidents; in the second place, it is not a method which is easily carried out or agreeable to patients. In fact, of all forms of treatment, it is the most liable to discourage patients, and to lead them to abandon treatment altogether. For a treatment of long duration it is necessary to consider the social necessities and exigencies of life, and from this point of view the inunction treatment is the most incommodious. It is not likely that a treatment of this kind will be regularly carried out by the hard-working man, whose time is filled up from morning to night, or by the man about town, whose time is spent in frivolity, and who doesn't go home till two or three o'clock in the morning; still less by a laborer. And as for the women, those who would benefit most from this method have the least opportunity for carrying it out. The demi-monde have something else to do at night than rub themselves with ointment, and their nocturnal occupations are little compatible with treatment of this kind!

But, if I condemn inunction as a routine method, it is not because I think it incapable of realizing what I should require from other methods. On the contrary, I am satisfied that it is equal to, if not better than, any other. I am convinced that if we had to deal with an ideal patient who tolerated inunction, and carried it out regularly and for the whole of the necessary time, we should obtain a result which would leave nothing to be desired. If I condemn inunction, it is for the sole reason that it is impracticable as a routine procedure for the following reasons: It runs the risk of being badly performed; it may

cause stomatitis; it is unpleasant for the patient; it will certainly not be tolerated for the whole of the time necessary to effect a cure; it may end by discouraging the patient, and cause him to become disgusted with treatment; in fact, it may end in precisely the opposite result to that which we desire to attain.

I therefore conclude: (1) That, as a conditional method conforming to the indications mentioned above, inunction constitutes an excellent mode of treatment; (2) but that it does not realize the conditions necessary to make it a routine method in the treatment of syphilis.

CHAPTER XI

MERCURIAL PLASTERS—MERCURIAL BATHS

Besides mercurial inunction, there are two other methods which depend on cutaneous absorption, which I shall briefly consider.

Mercurial Plasters.—It was long ago believed that mercurial plasters constituted a means of absorbing mercury by the skin, and this mode of treatment was applied to certain syphilitic lesions, especially cutaneous eruptions. It was afterwards thought that this mode of absorption might be suitable for the general treatment of syphilis. This double action was no doubt attributed to the famous *emplastrum de Vigo,* which, besides mercury, contained no less than twenty-three drugs, all supposed to be endowed with marvelous virtues. This plaster has survived, and is still used nowadays, with the expurgation of a number of inert or ridiculous substances to which much importance was formerly attached, such as the fat of vipers, living frogs, and earthworms washed in wine.

As it is not without interest to know the composition of this famous plaster, I will give the original recipe of Vigo:

Oil of camomile, oil of anethum, oil of nard, oil of lily, āā 2 ounces; oil of saffron, 1 ounce; pig's fat, 1 pound; calf's fat ½ pound; euphorbium, 5 drachms; oliban, 10 drachms; oil of laurel berries, 1½ ounces; viper's fat, 2½ ounces; living frogs, 6; earthworms washed in wine, 3½ ounces; juice from the roots of dane-wort and alder, āā 2 ounces; odoriferous rush, stœchas, āā a handful; aromatic wine, 2 pounds. Boil till evaporation of the wine; filter and add: Litharge, 1 pound; turpentine, 2 ounces; white wax, q.s. Make a plaster in the form of a sparadrap, adding toward the end of the process 1½ ounces of liquid styrax. Remove from the fire, and agitate the mixture with a

spatula till it is half cold. Then add mercury mixed with saliva, 4 ounces. Agitate again with the spatula till the mercury is completely incorporated.

Some of the substances which figure in this formula are certainly astonishing, but we must remember that at the time of Vigo all the bodies in nature were reputed to be endowed with multiple properties, some more extraordinary than others. The viper, for example, was at the same time "an alexipharmic, an antiputrescent, an incitive, a deobstruent, and especially a depurative." It was considered as an almost universal remedy. Earthworms were regarded as diaphoretics, antacids, resolvents, etc. Frogs had no less remarkable properties as "temperants, emollients, aperients, dissolvents, humectants, and detersives," etc. It was to these that the beneficial effects of the plaster were chiefly attributed, and this was for a long time called the "plaster of frogs."

The actual formula for *emplastrum de Vigo* in use at our hospitals is as follows:

Emplastrum simplex		2,000 parts.
Yellow wax, Colophane	āā	100 "
Bdellium, Ammoniacum, Oliban	āā	30 "
Myrrh, Saffron	āā	20 "
Liquid styrax		300 "
Turpentine		100 "
Oil of lavender		10 "
Purified mercury		600 "

This formula contains 20 per cent. of mercury (Pharmacopœia of the Hospitals of Paris).

It is only lately that treatment by mercurial plasters has been studied scientifically by Quinquaud.[1] His method consists in the application of a sparadrap of calomel of the following composition:

[1] "Treatment of Syphilis by the Sparadrap of Calomel," *Annales de Derm. et de Syph.*, 1890.

Diachylon plaster	30 parts.
Calomel	10 "
Castor-oil	3 "

This is applied to the skin for a week, and then renewed till the desired effect is produced. That mercury is absorbed by this method is proved by its appearance in the urine, and the occasional production of stomatitis. It has also been shown to produce therapeutic effects, and, according to Quinquaud, caused the disappearance of secondary syphilides in one or two weeks. But this procedure, which may suffice for the cure of superficial manifestations, has not been proved to be suitable for the fundamental treatment of syphilis.

Mercurial Balneation.—This method is neglected nowadays, but formerly was much in vogue, especially in the treatment of infantile syphilis. It consists in the administration of a series of tepid baths containing bichloride of mercury:

Bichloride of mercury Hydrochlorate of ammonia	āā 5 drachms.
Water	6 ounces.

To be added to the bath.

The amount of bichloride is increased or diminished according to age, and has been increased even to fifteen drachms.

This method certainly has some therapeutic effect, especially on cutaneous syphilides, and sometimes the results have been surprising. Thus, Hutchinson relates a curious case of a papulo-squamous syphilide which disappeared as if by magic under the influence of mercurial baths. On the other hand, it is certain that in most cases the method is inert, for the absorption of mercury by a healthy skin is infinitesimal. On the contrary if the skin is excoriated or ulcerated, the mercury is absorbed, and gives rise to more or less therapeutic effect, and sometimes to severe toxic symptoms. In the case mentioned above, the rapid disappearance of the eruption was followed by violent stomatitis.

This mode of treatment is, therefore, dependent on the state of the skin and its power of absorption, which cannot be clini-

cally determined, and this consideration is sufficient to exclude the method from practice. Although mercurial baths may be useful in certain cases for the local treatment of cutaneous syphilides, they do not constitute a suitable method for the fundamental treatment of syphilis.

CHAPTER XII

METHOD BY FUMIGATION

The treatment of syphilis by mercurial fumigation is nearly as old as the inunction treatment. It is found mentioned at the beginning of the sixteenth century by Angelo Bolognini and Jacques Catanée,[1] and later on by Nicolas Massa and others. Having been successfully used for the treatment of cases of chronic scabies, it was applied to the skin eruptions of the "new disease."

Fumigations were in great favor in former times, and, as they were then performed, constituted an excellent means for determining the "good salivations" which were then considered necessary to eliminate the corrupt humors. Here, as for inunction, we must distinguish between the old and modern treatment.

The old treatment, which was also called the "treatment by perfumes," consisted in preparation, fumigation, and sudation. The preparation, as in the case of inunction, included bleeding, purging, and the use of the so-called alterative and depurative remedies. After this the patient, quite naked, was put in a kind of small tent in a closed and heated chamber. Near the patient was placed a brazier, in which tablets were thrown to produce fumigation. These tablets were of complex composition, and, besides various mercurial preparations, such as cinnabar, calomel, red precipitate, turpeth, etc., contained substances intended to cause a dense smoke, such as fats, resins, incense, mastic, oliban, benzoin, aloes, styrax, etc. The patient was exposed to this hot and smoky vapor for half an hour to an hour, according to his strength. It is needless to say that he emerged in a half-suffocated condition. However, if he showed signs of

[1] *Vide* Astruc, "Treatise on Venereal Diseases," 1743.

swooning, he was allowed to breathe a little pure air by means of a tube passed into the tent. Finally, the patient was put into a hot bed and covered with bedclothes, and left to perspire for an hour or two.

This procedure was repeated every day or every other day, according to the strength and power of resistance of the patients, for it was no light affair to support such semi-asphyxiation.

The accidents that might result from such a brutal practice are easy to imagine; for it was not only fumigation of the skin, but also mercurial inhalation, the patient having his head plunged for half an hour in mercurial vapors, which penetrated the lungs and the organism in indeterminate doses. In fact, this practice was prolific in disasters, which are admitted by the old authors with naïve resignation. First of all, it produced what was desired—namely, profuse salivation—which, according to Fallopius, lasted seven or eight days, during which time the patient spat out from six to ten pounds of saliva! Besides this, it caused a series of accidents, some immediate and others consecutive, such as "suffocation, swooning, asthma, bronchitis, pulmonary catarrh, ophthalmia, headache, and diarrhœa," and sometimes graver symptoms, which the authors describe as "debility, cachexia, marasmus, convulsions, epilepsy, apoplexy, paralysis, etc." Sometimes things went even further, and fatal cases are recorded by Fallopius and others.

Astruc relates a curious experiment which was made in Paris in 1737. "An empiric, named Charbonnier, formerly a sheriff's officer at Aix, came to Paris, whither all charlatans wend their way. He had no sooner arrived than he announced that he had discovered a new method of curing the pox—quite new, short, easy, efficacious, and without danger. The magistrates decided that he should prove the effects of his remedy by a demonstration before the medical faculty." The experiment was made on thirty-seven patients. But it appears that the method, which consisted in mercurial fumigations made with a "mysterious powder," were neither perfect nor inoffensive, since in the course of a few weeks four or five of the patients died during treatment!

Nowadays the method is not modified, but transformed, and no one is now killed by fumigation. It was first of all recognized that, although fumigation might be useful, inhalation was absolutely dangerous. In 1776 Lalouette invented his fumigation-box, which is practically the same as that used at the present time. The body of the patient is enclosed in this box, but his head is outside and free from the mercurial vapors—a great improvement on the old system.

After this, the burlesque practice of what was called "preparation" was abandoned. Salivation was then given up, and was eventually regarded not as a beneficial result, but as a complication of the treatment. Finally, the famous "perfumes," which only serve to suffocate the patients, were banished.

On the other hand, the most inoffensive preparations of mercury were sought. Formerly cinnabar, gray oxide, and impure calomel were used; but cinnabar is liable to decomposition by heat and produces sulphurous acid, which is very irritating; the gray oxide gives rise to bioxide, which is too energetic; dry calomel gives off hydrochloric acid, but this is not produced when it is volatilized in contact with steam. So that, after many experiments, we now only use very pure calomel, and only volatilize it in the presence of steam.

Fumigation as it is now practised is a very simple affair. The patient, seated on a wooden chair, is enveloped up to the neck in a sheet, which extends on to the floor. Under the chair is placed the vaporizing apparatus, which consists of a spirit-lamp, a tripod, and a circular basin forming a water-bath, with a cupel placed in its center. The lamp is lit under the tripod, which supports the basin full of water; and this water volatilizes the calomel (fifteen to sixty grains) placed in the cupel. In a few minutes simultaneous volatilization of the water and calomel takes place, and the patient is bathed up to the neck by the vapors of calomel and water. The head is free from these vapors, and inhalation is reduced to nil, if care is taken to hermetically close the coverings of the patient. At the end of a quarter of an hour volatilization of the calomel is complete; the lamp is extinguished, and the patient is left for another ten minutes in the vapor. After this he is put to bed for three-

quarters of an hour, enveloped in the same coverings. The fumigation is repeated every day, every other day, or twice a week, according to the indications of the case.

The partisans of this method of treatment claim the following advantages for it:

1. That it respects the stomach and digestive functions.
2. That it is easy and convenient of application.
3. That it is an active and powerful method.

Lalouette, in the eighteenth century, said that his system combined safety with convenience, and that twenty to twenty-five fumigations were sufficient to cure ordinary cases of syphilis. In our time several physicians, including Langston Parker, Henry Lee, Bumstead, Duncan, Wilders, and Horteloup, have vaunted its curative effects.

But if we examine the facts, we find a series of observations proving that fumigations have cured syphilides of different kinds more or less rapidly. Such, for example, are the cases reported by Horteloup concerning different forms of secondary syphilides, such as vegetating mucous patches, ecthyma, etc., on which this mode of treatment exerted a beneficial action.

It is undeniable that mercurial fumigations favor the cure of certain specific dermatoses, especially those of an ulcerative nature. But when we are told that fumigation constitutes an excellent treatment for syphilis, what clinical proofs are produced in support of this assertion? There are no observations showing that patients, after treatment by this method for a certain time, have remained free from symptoms. On the contrary, they have always been observed for a short time only, on account of some lesion, and have then been lost sight of. So far as I am aware, no serious attempt has been made to treat syphilis by this method alone for the whole time necessary to effect a cure by mercurial treatment. We therefore know nothing of the preventive influence of this treatment on the later stages of syphilis.

Such are the advantages of the method, and, on the whole, they are only mediocre. On the other hand, there are serious objections to it.

1. It often causes stomatitis if the fumigations are too fre-

quently repeated. It sometimes produces a state of general debility, probably owing to the profuse and repeated diaphoresis. If it is not properly carried out, it may excite laryngeal spasm and bronchial catarrh, etc. It is much worse when, by accident or intentionally, inhalation is added to fumigation; for inhalation by itself is very dangerous, and may cause stomatitis, dyspnœa, suffocation, and syncope. Henry Lee reported the case of a young woman who, after breathing calomel vapor, became unconscious, livid and cyanosed, and succumbed. At the autopsy the lungs were found emphysematous and congested; the other organs were healthy. There is no doubt that in this case fumigation was the cause of death.[1]

2. In the second place, it is an uncertain method. It is said vaguely that the healthy skin absorbs little, and the diseased skin more; but we do not know the amount of absorption in any particular case, and therefore we cannot regulate the therapeutic effect. If the skin is denuded in places, there is a risk of too much absorption. In fact, with this system it is impossible to know exactly what we are doing. It is a proceeding which leaves too much to chance to constitute a good therapeutic method.

3. Lastly, it is a method which in many cases is impracticable. In hospital, where every convenience is at hand, and time is no object to the patient, fumigation is easy to carry out. But in private the objections to it are almost insurmountable. It requires an apparatus and an assistant, and takes up too much time for a busy man to devote to it.

As Mauriac has well remarked, "if fumigation under the mitigated form, in which they are employed nowadays, may render good services, they are far from filling the capital rôle which some physicians would accord to them in the treatment of syphilis. Were they much more active than they are, they would always be subject to difficulty in application. They remain an exceptional method, a satellite of other more simple and more powerful medications, more easily managed, and more calculable in dosage."

We may conclude by saying—

[1] *Transactions of the Medical Society of London*, 1872.

1. That mercurial fumigations certainly cause local effects, which may be advantageously utilized in the eruptions of syphilis, and especially in certain rebellious forms of secondary syphilides.

2. That they constitute an inconvenient and uncertain method, liable to become dangerous.

3. That they are quite unsuitable as a method for the prolonged treatment of syphilis.

Mercurial Flannels.—This is another method based on the volatile property of mercury, and consists in the absorption of mercurial vapors by means of mercurialized tissues. These tissues consist of flannel impregnated with mercury in a state of fine division. This is effected by soaking them first in a mercurial bath, and afterwards in ammonia, the mercury being reduced by the ammonia to an impalpable powder of precipitated mercury. They are known as *Merget's flannels;* and *Blaschko's mercolint* consists of cotton impregnated in the same way. A piece of the tissue is enveloped in lint, to prevent dispersion of the powder, and placed on the patient's pillow, so that he inhales the vapor of mercury during the night. Or a sort of plastron may be made of the stuff and suspended round the neck. This plastron gives off vapor which is inhaled at night, and even during the day by the opening in the shirt.[1] Bordier has shown experimentally that one of these flannels, eight by ten inches, gives off every hour an average of one-seventh grain of mercurial vapor. The nocturnal inhalation for eight hours is said to be sufficient for therapeutic effects.

This original proceeding has not been much tried in France, but has been employed abroad by Welander, Blaschko, and others. It certainly has the advantages of simplicity and convenience, and realizes mercurial absorption, as is shown by analysis of the urine. But it can only be regarded as a method of medium therapeutic activity, only suitable for mild cases, and is certainly useless as a fundamental treatment for syphilis.

[1] Merget, *Journal de Médecine de Bordeaux*, 1891.

CHAPTER XIII

METHOD BY SUBCUTANEOUS INJECTIONS

THIS method consists in the introduction of certain mercurial preparations under the skin, with the object of absorption by the circulatory system. In contrast with the two methods we have just considered, it is of recent date.

It appears to have been originated by Hebra and Hunter. Scarenzio tried it in 1864, but the method did not really enter into practice till after the publications of Lewin in 1867. Since then the treatment of syphilis by subcutaneous injections has come into vogue, and the number of publications which have been devoted to it is immense. Several years ago these works numbered three hundred and sixty, according to Scarenzio, and since then they have become innumerable. It is impossible to mention the names of all the authors who have written on this subject, but I may mention the names of Scarenzio, Lewin, Liégeois, Taylor, Sigmund, Martineau, Terrillon, Smirnoff, Besnier, Balzer, Stoukowenkoff, Neisser, Lang, Galliot, Panas, Tarnowsky, Silva Araujo, Jullien, Barthélemy, Le Pileur, Morel-Lavallée, Feulard, Portalier, and Étienne.

In fact, since its origin, the question of mercurial injections has continually enlarged and presented itself in new aspects. First of all, a great variety of mercurial preparations, some of them unknown to the majority of practitioners, have been proposed as being suitable for the method. For several years the medical journals have almost constantly given us the formula of some new mercurial injection which, according to the usual custom, is nearly always represented as "the best of all," and "superior to all others, both as regards tolerance and therapeutic effects."

In the second place, the hypodermic method is already subdivided into two rival methods—that of frequent injections, and that of infrequent injections, to say nothing of the varieties which each of these admits of. Then, more recently, the method of intravenous injections has been introduced, by which mercury is injected directly into the blood-stream.

Let us first examine what advantages are claimed for the hypodermic method over other methods of mercurial administration.

Advantages of Injections.—1. It avoids deceit on the part of patients. With mercurial injections there is no fear of patients eluding treatment. This is a consideration of some importance, especially in hospital, where patients, owing to their horror of mercury, often avoid swallowing medicine by various subterfuges.

2. It is said that the hypodermic method is the only one which insures the absorption of mercury in a definite manner; that mercury administered by inunction may be incompletely absorbed, and that pills may pass through the intestine unchanged.

I do not attach much importance to this proposition, for the absorption of mercury, both by inunction and injection, is proved by the occurrence of stomatitis and diarrhœa, by the presence of mercury in the urine, and by the curative effects obtained. It is true that there is insufficient absorption of mercury by inunction if it is badly performed, and of mercury ingested by the stomach on account of diarrhœa, etc., but such failings are less attributable to either of these methods than to their defective application. Moreover, these are uncommon eventualities against which it is easy to take precautions. On the other hand, it is equally possible that mercury introduced into the tissues by injections may partly escape absorption, and under the influence of inflammatory reaction may become encapsuled in a kind of impermeable cyst.

On the whole, we may conclude that mercury, when properly administered, always penetrates into the economy, whatever the method adopted, and that the hypodermic method, from this point of view, is not markedly superior to any other method.

3. The hypodermic method is said to insure the most exact dosage of the remedy. The dose of mercury absorbed by inunction or ingestion is unknown, while the dosage by injections is said to be mathematically exact. For instance, if a centigramme of sublimate is introduced under the skin, it is assumed that the economy is in possession of exactly a centigramme of sublimate.

But this accuracy appears to me more apparent than real, for it assumes that the dose absorbed is always the same as the dose injected. That this is most commonly the case I will not deny, but that it is sometimes otherwise has been many times shown—for instance, when the mercurial deposit becomes surrounded by an inflammatory cyst, which prevents absorption. Moreover, do we ever know the dose of a remedy which is absorbed? The physician does not regulate his treatment by this hypothetical dose, but by the physiological or curative effects which he obtains from the dose administered.

4. The hypodermic method has two more important advantages—viz., it leaves the stomach free for the administration of other remedies, such as iodide, tonics, etc.; it also avoids irritation of the digestive organs. These advantages, however, are not peculiar to it, and are shared by the method of inunction.

These points are of special importance in a chronic disease such as syphilis, requiring a treatment of long duration. To treat a patient for syphilis without disturbing the digestive functions, so that he can preserve his appetite and take his ordinary diet, is an important consideration, and there is no doubt that the hypodermic method realizes this in the great majority of cases. Prolonged experience has shown that, when certain doses are not exceeded, and when the treatment is interrupted from time to time according to the principle of the "chronic intermittent method," mercurial injections cause no trouble to the digestive tube. For this reason they are especially useful in patients who are liable to dyspepsia or diarrhœa.

But this being granted, there are two contradictory points to be considered. In the first place, this immunity of the digestive functions may be realized by other modes of mercurial administration, even by ingestion. I can confidently

affirm that I have treated thousands of patients by inunction or by ingestion without causing the least harm to the stomach or intestine. On the other hand, the hypodermic method does not always respect the alimentary canal so absolutely as might be supposed on theoretical grounds. In average doses it is certainly well tolerated, but if these doses are exceeded the digestive system is affected, especially the large intestine.

Rollet reports gastric disorders and vomiting occurring immediately after injections of two centigrammes of sublimate. Stöhr observed gastro-intestinal catarrh, hæmorrhagic diarrhœa, and tenesmus after the same injections. Balzer found hæmorrhagic colitis after experimental injection of different mercurial salts in animals, and I have myself seen intense colitis caused by three injections of five centigrammes of calomel in a woman who died of malignant syphilis. Therefore, the advantage of mercurial injections over other methods as regards gastro-intestinal immunity is relative and not absolute.

5. However, the success of the hypodermic method does not depend on considerations of this kind, but on its *therapeutic intensity*. In this respect the method has realized the expectations that were made for it. It is a powerful form of mercurialization, and has an energetic action on most of the manifestations of syphilis. In a certain number of cases it is more efficacious than other methods, and in some cases it constitutes a treatment of election for certain special lesions.

This is the true merit of injections in the eyes of the medical profession, and when mercurial injections are prescribed in preference to other modes of treatment, it is in the hope of obtaining a more rapid action on some syphilitic manifestation. The chief merit of the method lies in its therapeutic intensity.

Technique of Injections.—The introduction of a mercurial preparation into the tissues is not free from inconvenience or even danger, and is only effected in an inoffensive manner by taking certain precautions.

1. In the first place, it is necessary to exclude any preparation which is caustic or very irritating.

2. In the second place, it is necessary for the solutions to be chemically pure and sterilized. This point is necessary to

emphasize, because the precaution of sterilizing preparations intended for mercurial injection is neglected in some pharmacies. This has been shown by Dr. Cathelineau, who took a prescription for injection, consisting of calomel in vaseline, to twenty-six chemists in Paris, and obtained cultures of divers microbes from eight of them.

3. In the third place, the syringe should be modified so that all its parts can be separately sterilized. The needle should be made of platinum-iridium, and about two and a half inches long. The best form of syringe is that of Luer, which is made entirely of glass.

4. Strict antisepsis should be carried out by washing the skin with carbolic lotion or alcohol, and treating the syringe in the same way. The needle should be passed through a flame before insertion.

5. The injection should be made deeply, because experience shows that deep injections are less liable to cause pain, abscess, etc., than more superficial ones. According to Gaucher and Stoukowenkoff, injections should be made, in the case of benzoate of mercury, into the cellular tissue, but the majority recommend injections into the muscles. Intramuscular injections are said to be less painful, less liable to inflammatory reaction, and more rapidly absorbed.

6. The choice of the region for injection is not a matter of indifference, for some regions support injections better than others; the back or the buttocks are more tolerant than the arms, in which nodosities and neuralgic pains are liable to be produced. The three seats of election for intramuscular injections are: (1) The retro-trochanteric fossa, (2) the lumbar muscles on each side of the spine, (3) the buttocks.

Of these three regions, the first is to be preferred, because of the absence of pressure on the point of injection in all attitudes, whether sitting or lying down. The practical objection, however, to the retro-trochanteric region is its limited extent, so that, if many injections have to be given, they must be extended on to the buttock. Gaillot has determined a fixed point in the buttock which is most suitable for injections. This point corresponds to the intersection of two imaginary lines,

one horizontal, two fingers' breadth above the great trochanter, the other vertical at the junction of the inner and middle third of the buttock. This point is comparatively free from vessels and nerves, and is less liable to pain and phenomena of reaction.

For my part, I think it is only necessary to avoid the lower third and the central region of the buttock, the former because of pain in the sitting posture, the latter because of the sciatic nerve and great vessels. Injections are especially well tolerated in the upper third of the buttock, and should always be directed outwards, to avoid the large vessels and nerves.

7. There is an advantage in proceeding by two stages, by first inserting the needle to see if any blood comes through it. This precaution avoids the risk of injecting into a vessel, which in the case of insoluble salts might cause embolism.

8. The injection should be made very slowly, for it has been noticed that rapid injections have most often been followed by accidents.

9. After withdrawal of the needle, light massage of the region has been recommended to cause diffusion of the liquid.

10. Lastly, when a numerous series of injections have to be practiced on the same patient, they should be alternated from one buttock to the other, and should also be made at points as widely separated as possible in each buttock.

The hypodermic injection of mercury may be carried out by one of two methods—(1) by daily injections of small doses, and (2) by weekly injections of large doses. The former of these methods corresponds to daily mercurialization by ingestion or inunction, in the sense that it furnishes daily the necessary dose of mercury. The second method has no counterpart in the older practices, and consists in mercurialization by large doses at definite intervals.

CHAPTER XIV

METHOD BY FREQUENT INJECTIONS

This consists in a series of mercurial injections practiced daily for three to five weeks or more. The mercurial preparations used for this purpose are nearly all soluble, but sometimes insoluble salts suspended in a liquid vehicle have been used.

The number of preparations which have been used for this method are extremely numerous, and include the following:

Sublimate.
Chloro-albuminate of mercury.
Peptonate of mercury.
Double chloride of mercury and ammonium.
Biniodide in iodide of potassium.
Double iodide of mercury and sodium.
Biniodide of mercury in oily solution.
Cyanide of mercury.
Formamide of mercury.
Glycocolate of mercury.
Urate of mercury.
Salicylate of mercury in salicylate of sodium.
Benzoate of mercury in chloride of sodium.
Iodo-tannate of mercury.
Lactate of mercury.
Acetate of mercury.
Alaninate of mercury (amido-propionate).
Succinimide of mercury.
Asparaginate of mercury (oxide of mercury and asparagine).
Sozoiodolate of mercury.
Iodo-mercuric cacodylate. (This is a mixture of biniodide of mercury, iodide of sodium, and cacodylate of sodium.)
Hermophenyl (oxide of mercury dissolved in phenol disulphonate of sodium).

This therapeutic richness is more apparent than real, for it is composed of similar agents with the same base. All these remedies are, so to speak, mercury served up with different sauces! Among so many remedies it is difficult to make a choice, especially as each new formula for mercurial injection never fails to be announced as superior to all others, both as regards its degree of tolerance and its therapeutic effects. Each new formula is said to be destined to replace all others. However, they cannot all be the best.

In fact, we are far from knowing the absolute value of all these new remedies, and are still less informed as to their relative values, their therapeutic effects on the present and the future of the disease, and their application to the different manifestations of syphilis. A work of revision is therefore required for the solution of these diverse problems, and this must be the result of long and patient observation. However, the five following remedies are the ones usually preferred, as their advantages and disadvantages have been tried by an already long experience:

1. *Sublimate.*—This is generally prescribed according to Lewin's formula:

Bichloride of mercury.....	½	gramme.
Chloride of sodium.....	1	"
Distilled water.....	100	grammes.

A cubic centimeter of this solution contains exactly five milligrammes of bichloride (one-thirteenth grain). This dose may be doubled if it is well tolerated.

2. *Peptonate of Mercury.*—This is a solution in glycerine and water of a mixture of peptone, sublimate and chloride of ammonium.

According to the chemists, the so-called salts known by the name of "chloro-albuminate" or "peptonate" of mercury do not exist in the form of definite compounds. The compounds which are formed when a solution of albumen or peptone is treated with a solution of sublimate are not constant in composition. An excess of albumen or peptone will redissolve them, and in no case can definite crystalline products be

obtained. The alkaline chlorides, especially those of sodium and ammonium, dissolve the albumino-mercuric or peptono-mercuric precipitates. It was thought that by this means crystallization of the mercurial compounds derived from albumin and peptone could be effected, but this is an error. The crystals thus obtained are formed by the alkaline chlorides mixed with a certain quantity of albuminous solution only containing traces of mercury. There exist many albuminous or peptonic compounds holding mercury in solution, but the proportion of the metal varies with each substance employed and with the mode of preparation, and they cannot be called definite chemical compounds. To obtain a solution containing an invariable and known quantity of mercury, it is necessary to weigh a certain quantity of sublimate, dissolve it in water, and add an albuminous or peptonic solution slightly acid to redissolve the precipitate formed. In this way only is it certain that a known volume of the solution contains a definite quantity of mercury (Pouchet).

The peptonate of mercury contains about a centigramme of bichloride in a cubic centimeter of distilled water. It is better tolerated than the sublimate, and is more commonly used.

These two preparations are administered in doses which vary according to many conditions, but the average dose is that equivalent to two centigrammes (two-sevenths grain of sublimate).

3. *Cyanide of Mercury.*—This is given in doses of one centigramme (one-seventh grain), according to the following formula:

Cyanide of mercury Hydrochlorate of cocaine	}	āā 10 centigrammes.
Distilled water		10 grammes.

Marfan recommends cyanide injections in children, and says they are less painful than other injections. Instead of the above one per cent. solution he uses one in one thousand. For a child of ten years, five c.c. of this solution are injected every other day, representing one-half centigramme of cyanide (one-fourteenth grain).

4. *Benzoate of Mercury.*—This is rendered soluble by chloride of sodium. It was introduced by Stoukowenkoff, and has been used since then by Balzer, Gaucher, and others. It is given in daily doses of one to two centigrammes, according to the following formula:

Benzoate of mercury	10 centigrammes.
Benzoate of ammonia	50 "
Distilled water	10 grammes.

5. *Biniodide of Mercury.*—Biniodide oil was introduced by Panas:

Sterilized oil	10 c.c.
Biniodide of mercury	4 centigrammes.

One c.c. contains four milligrammes of biniodide (one-sixteenth grain).

This was first used for the treatment of ocular syphilis, and soon came into general use. It is an active and safe remedy, and is better tolerated than most injections. It causes very little pain as a rule, and seldom gives rise to nodosities or to stomatitis. Its virtues, however, have unfortunately been much exaggerated. It has been praised as "a perfect remedy from all points of view, absolutely painless, free from all danger, and endowed with a constant, rapid, and powerful action, which is not surpassed by any other mercurial preparation." Such enthusiasm is not only contrary to the truth, but is dangerous for patients, by making them believe that biniodide injection constitutes the safest and most powerful remedy for syphilis.

Although it is well tolerated in the great majority of cases, biniodide sometimes causes severe pain. It may also cause nodosities, and even stomatitis when the dose is increased. In fact, it admits of all the accidents which are common to mercurial injections. For example, in one of my patients, after nineteen injections, which were well tolerated, a twentieth was followed by a hæmatoma, considerable sloughing, and paralysis of the extensors of the foot. Again, Dr. Brocq showed at the Dermatological Society a large slough from the buttock, which

followed an injection of biniodide oil (one-seventh grain). Although it had contracted in the spirit, this slough measured five by three inches, and was nearly two inches thick, and its deep surface consisted of muscular débris from the gluteus muscle!

With regard to the powerful action and curative effect of biniodide, I admit that it is an active remedy, but only one of medium intensity. In this respect it is undoubtedly inferior to calomel, and also to gray oil. This has been demonstrated by hundreds of cases which yielded to calomel or gray oil, after being little influenced by biniodide. To put biniodide on the same level with these remedies as regards their efficiency is certainly a therapeutic heresy. If I were to establish a hierarchy among the different agents for hypodermic mercurialization, with regard to their relative power, I should unhesitatingly place calomel in the first rank as a remedy which at present is unsurpassed, gray oil in the second rank, and biniodide a long way afterwards in the third rank, along with some others, such as benzoate, salicylate, and cyanide, all active and useful remedies, but incomparably inferior to the preceding in therapeutic energy.

Moreover, I may add that the usual dose of biniodide (four milligrammes) is too small, and has little action on the majority of cases. Its true dose, to produce therapeutic effects, is between six and ten milligrammes (one-tenth to one-seventh grain). Another detail of some importance is that when the dose of biniodide is increased the amount of solution injected should also be increased, instead of concentrating eight or ten milligrammes into one c.c. of oil. Too much concentration is liable to cause pain and induration; and this actually occurred in the case of Brocq's mentioned above.

The five preparations we have just considered are far from reciprocally equivalent in their therapeutic effects; but these differences are of minor importance compared with the major question we have now to deal with—viz., the value of daily injections as a routine treatment for syphilis; their advantages and disadvantages; and, finally, whether they ought to supersede the older methods of treatment.

Advantages of Injections.—A conflict of opinions has been raised with regard to the value of the method of injections. Some exalt it as superior to all other modes of mercurial administration; others do not consider it better than other methods; others, again, reject it on principle, and only admit it as a method suitable for exceptional cases.

Time and experience have gradually blunted these acute dissensions, and allowed for the exaggerations of contradictory opinions. The truth has been revealed on a number of points, and this is how matters stand at present:

First of all, it is incontestable that the method of daily injection possesses a real and powerful antisyphilitic action. *A priori,* this result is easy to foresee, for no matter how it is administered, mercury is always mercury, and will always react on syphilis in its own way. *A posteriori,* this result is proven, and to dispute it would involve the contradiction of thousands of observations reported by eminent and impartial physicians in all countries of the world. However, the main point at issue is not whether mercury administered in this way has a curative action on syphilis, but whether this mode of administration is, or is not, preferable to others.

If we are to believe certain observers, the method in question is perfect, and capable of realizing more than any other method. One of its partisans states that "hypodermic injections constitute the best method for the administration of mercurial preparations. With them none of the accidents which so often occur with mercury need be feared; with them all syphilitic lesions, whatever their gravity or extent, are rapidly arrested. By the aid of this method the physician need have no more fear of syphilis; no other method can be preferred, or even compared to it; further, the physician would be wrong not to adopt it." In support of these statements, the lamented colleague from whom the preceding quotations are taken cites extraordinary cases of cerebral syphilis cured by ten injections, choroiditis cured in five days, cure of general paralysis, etc.

Needless to say, these are only illusions, which time and experience soon estimate for what they are worth. Less enthusiastic but more patient observation has shown that the method

in question has not the almost miraculous action which had been imprudently attributed to it.

Certain arguments which were brought forward to prove the superiority of the method over all others have been shown to be non-legitimate or insignificant. I will cite two examples, which were for a long time presented as high recommendations in favor of the said method:

1. It was said that the method had the great merit of shortening the stay of patients in hospital. Thus, Lewin, who insisted on this point, takes care to inform us that at the Charité Hospital in Berlin patients treated by the older methods remained for ten weeks on the average, while with the new method the average time in hospital was reduced to four weeks.

But what does this prove? In what way are the patients to-day better cured of their syphilis after their four weeks' stay in hospital than the other patients after ten weeks? For any one who regards such statistics philosophically there is only one deduction to be drawn—namely, that the patients formerly were discharged from hospital uncured, in spite of their ten weeks of treatment, and that no less surely they go out to-day after twenty-eight days in a similar state of *non-cure.*

2. Another argument of the same kind is that "with the older methods *recurrences* after treatment occurred in the proportion of eighty per cent., while with the new method they have decreased to an average of forty per cent."

On this point I do not hesitate to reply to the authors of such an argument in the following words: Your old statistics and your new statistics are both equally bad, for if they were correct, it is neither eighty times nor forty times in one hundred that recurrences would be noted, but one hundred times out of one hundred. Is there any form of treatment that conjures syphilis? Does not syphilis, even when well treated, nearly always manifest itself by some later sign, which is improperly called a recurrence?

As a general rule, all the statistics which have been produced relative to the results of the method have the fatal error of being based only on *a short stage of a long disease.* A patient treated by injections is under observation for a few weeks or

a few months; he goes out of hospital in a satisfactory condition, and from this is concluded the superiority of the method! But what happens to this patient ultimately, in a year, or in ten years? But this is not taken into consideration. The actual symptoms have disappeared in a period of time which is regarded as relatively short, and this is sufficient to proclaim the method as not only efficacious, but "superior to all others"! I do not exaggerate when I affirm that it is on a scheme of this kind that nearly all the observations have been calculated on which the value of the method depends.

As Mauriac has pointed out, such observations occupy too short a period, both of the disease and of the patient's life, to have a signification of any importance. The only convincing observations would be those continued for ten or twenty years, to see what becomes of patients treated by injections; but these remain to be done.

On the other hand, contradictory facts have been produced, and the method, which at first counted nothing but successes, with time and experience has been found wanting. While the system of injections was only applied to the treatment of secondary syphilis of a mild nature, it was usually successful; but when it was used in the more advanced stages for more serious lesions, it was less certain in its results. With the multiplication of observations the truth was revealed with regard to the value of the method, and early illusions dispelled.

This truth—at any rate, as it appears at the present day—is that the method of daily injections constitutes an active form of treatment for a number of syphilitic lesions; but it is not a form of treatment which can be regarded as particularly active and powerful; still less can it be considered as superior to all others in therapeutic intensity.

It is almost impossible to establish comparisons with regard to therapeutic results, but I look upon a course of treatment by daily injections of sublimate, in doses of one to two centigrammes, as approximately equivalent to treatment by protoiodide pills in doses of five to eight centigrammes.

We may therefore conclude that the method of daily injec-

tions constitutes a form of treatment which is useful in the treatment of syphilis, but that only a moderate degree of therapeutic activity can be expected from it.

It now remains to be seen whether the advantages which this method presents as a routine treatment for syphilis are counterbalanced by certain disadvantages, and, finally, what are the indications to which it responds more particularly.

Disadvantages of Injections.—Like all other methods, mercurial injections have their disadvantages. The question is whether they have more disadvantages than the other methods.

Two kinds of objections have been raised against injections—one due to the mercury, the other to the mode by which it is administered. I shall deal with the first briefly, because they are not attributable to the method itself.

1. Injections sometimes causes *stomatitis,* although some imprudent partisans of the method at first denied the fact. But stomatitis is a common accident in all forms of mercurial administration. In rare cases injections have been known to cause digestive or intestinal troubles; but this, again, is common to all methods. The prolonged use of injections has also been said to give rise to debility, but this is exceptional. On the other hand, Martineau found that injections increased the number of red corpuscles, augmented the body-weight, and raised the amount of urea, all of which show that they increase metabolism and favor nutrition.

But none of these points constitutes an objection to the system, since they are due to the mercury itself, and not to the manner of its introduction into the organism.

2. The second series of objections refers to the method itself, and consists in phenomena of *pain* and *local irritation.*

Pain.—Injections are certainly painful, but the pain varies in different subjects and with different mercurial preparations. It generally comes on from a quarter of an hour to an hour after the puncture, and diminishes after a few hours. A second variety of pain comes on several days after the injection. This is more acute and continuous, and the whole region becomes hyperæsthetic, especially after several punctures. This

also varies in different subjects, and according to many conditions of which we are ignorant.

However, the pain caused by injections is often sufficient to drive patients away from the hospitals where it is practiced, to seek another form of treatment elsewhere. Besnier, who has carefully studied this question, remarks: "As soon as a physician begins to treat patients by injections, desertion commences in his practice. I have twice observed this exodus when I was engaged in using soluble and insoluble injections. A considerable number of patients gave up attending immediately."

This is also my personal experience. Pain which is not repeated, or is only repeated a few times, is tolerated; but pain which is repeated every day, and sometimes twice a day, for weeks and months, with the prospect of numerous repetitions in the future, becomes insupportable, and is looked upon as a torture. This is, in fact, a grave objection to the method.

Nodosities.—Another objection, which has been diminished nowadays by more perfect technique, is the formation of nodular swellings at the point of puncture. These subcutaneous or intramuscular nodosities may vary in size from a filbert to a walnut. They are rounded, rather diffuse, hard, and sensitive to pressure. They often disappear in a few days, but sometimes persist for several weeks. Sometimes they give rise to a hyperæsthetic state of the whole region in which they are situated, especially when they are multiple. When they occur on an intolerant region, such as the arm, they are worse still. I have seen a woman, who was infected in the arm by syphilitic vaccine, in whom thirty-five mercurial injections made in the arm caused a large number of nodosities and much pain. Sometimes these nodosites develop into small abscesses.

Sloughing.—It is not impossible for injections to form a local sphacelus, and I have seen three cases in which this occurred as the result of sublimate injections. One of these sloughs was nearly two inches in diameter (*vide* also Brocq's case, p. 118).

But complications of this kind are almost ancient history. The possible accidents of mercurial injections are not the same as they were a few years ago, owing to improvement in technique, antiseptic precautions, the discovery of tolerant regions,

and the substitution of less iritating preparations. In fact, most of the dangers which were connected with injections when they were first introduced have been eliminated; but if the dangers have disappeared, certain inconveniences still remain.

To sum up, I may say that there is very little risk of abscess since the perfection of technique; but the nodosities are almost inevitable, and pain is constant, but very variable in degree in different subjects.

Conclusions.—The four following conclusions may, I think, be logically inferred from the preceding considerations:

1. That the method of mercurial injections has not sufficient disadvantages to exclude it from the list of antisyphilitic methods, especially as these disadvantages are often compensated for by undoubted therapeutic activity.

2. That it has sufficient disadvantages to preclude its preference over other methods, except under particular indications.

Indeed, apart from special indications, it would be illogical to have recourse to a system of daily injections to realize therapeutic effects which could be obtained by milder and more practical methods. If it is possible to arrive at the same result by different methods, there is no reason why preference should be given to a method which is always disagreeable and painful, and which requires daily attendance on the part of the physician or patient.

3. That it may render very useful services under special indications.

For instance, in cases where ingestion or inunction give unsatisfactory results, injections may succeed. A case in point is one of cerebro-spinal syphilis with incessant recurrences, which I treated with Gilles de la Tourette. In this case all possible methods of treatment had been tried, and the best effect was obtained from daily injections of peptonate of mercury.

Injections are also indicated in all cases where mercury cannot be administered by ingestion on account of dyspepsia, diarrhœa, etc., or when inunction cannot be carried out owing to cutaneous intolerance.

They also render useful service in cases where there is an indication to associate with mercury some other remedy, such

as iodide, bromide, or iron. To give these remedies by the mouth concurrently with mercury might cause gastric disturbance, while this is avoided by administering the mercury by injection.

Lastly, injections may be used in cases which require rapid and active mercurialization—for instance, in cerebral, spinal, and ocular syphilis, or in malignant syphilis.

4. That the system of daily injections is not suitable as a routine method for the treatment of syphilis.

It has been proposed that the method of injections should replace all other treatment for syphilis. Several of my colleagues have adapted the system of injections to my method of intermittent treatment—that is, by an intermittent series of injections lasting over several years. But this method should not constitute a routine mode of treatment, for two reasons:

First, because of the inherent dangers and inconveniences. That it may be used as a provisory method under certain indications I admit; but if it is indispensable that this treatment should be repeated on many occasions, what was acceptable as a provisory measure is not so as a permanent one. For this binds the patient, not only for weeks or months, but for years, to a course of treatment which is daily painful, disagreeable, and liable to lead to some mishap. This will end in the patient abandoning his treatment.

Secondly, this method is essentially *unpractical,* because it requires an amount of attention, both on the part of physician and patient, which cannot be realized practically. It requires daily injections which must be performed by the physician, for the patient cannot inject himself in the back or in the buttocks. In hospital practice this is easily carried out, but in private practice it is otherwise, and either the physician must visit the patient daily for the whole course of the treatment, or the patient must visit the physician. This involves loss of time in either case.

Moreover, the public, who are far from indulgent towards the medical profession, will accuse us of exploitation, as is proved by the following cutting which I have taken from a daily paper:

"Our modern doctors are very smart. To cure the misfor-

tunes of love, they have discovered a method which will oblige their patients to visit them every day. It is not for me to say whether this treatment will be good for the patients, but I have no doubt it will be good for the doctors"!

If this daily meeting of patient and doctor only lasted a few weeks it would be all very well; but if several courses of the same kind have to be carried out during several years, the mutual obligation will become impossible. Such treatment can never be realized with the attention and perseverance which are necessary for its success.

Again, these daily visits of patient to doctor or doctor to patient may end in making public what should be kept secret. For example, some years ago I was consulted by a notary from the provinces, who had contracted syphilis from one of his clients, and for whom one of my colleagues had advised treatment by soluble injections. He conscientiously submitted to six injections, but then lost patience, and came to me for some other form of treatment. "Pray prescribe something else," he said, "for I cannot submit to treatment which obliges me to visit my doctor every day. In a small town like mine, where everything is known and commented upon, where everyone pries into his neighbor's affairs, they cannot fail to observe my daily visits to the doctor, and interpret them in the worst sense possible. I might as well put a notice on my door that I had the pox!"

But I have said enough concerning the inconveniences, difficulties, and practical impossibilities connected with the system of soluble injections as a routine method for the treatment of syphilis, and I shall conclude by saying: (1) That, as an occasional resource responding to particular indications, the method of soluble injections may render useful services; (2) but that, as a routine treatment for syphilis, this method is the least practical of all. It is one of those which, save in exceptional cases, a true practitioner should never propose to his patients.

CHAPTER XV

METHOD BY INFREQUENT INJECTIONS

This method consists in a series of injections with large doses, made at longer intervals than in the preceding method—for instance, an injection of five centigrammes of calomel is given once a week. A series of five to eight injections constitutes a *course,* and a series of courses constitutes the treatment.

This method has nowadays taken an important position in the treatment of syphilis, and requires careful consideration with regard to its advantages, disadvantages, and indications. The method as it is now carried out is very different to what it was originally. At its beginning it was impracticable and dangerous, and it has only arrived at its present position by a series of transformations, attenuations, and improvements.

A few words of historical introduction are here necessary. It was first conceived that the hypodermic introduction of a large dose of an insoluble preparation of mercury would result in the gradual solution of this dose by the fluids of the organism. Owing to its slow absorption, mercurial intoxication was not feared, and this method had the advantage of introducing at a single dose sufficient mercury to last for a long time. Two or three injections were considered sufficient for the treatment of the secondary period, and eight or ten for the whole treatment of syphilis.

This was the programme of a system for the impregnation of the organism by a "reserve" of mercury, a method destined to make short work of syphilis—*cito, tuto et jucunde!* Such a programme, it is needless to say, was only a Utopia. Nevertheless, we must not refuse a legitimate tribute of homage to Scarenzio, of Pavia, who created the method of massive injections. His conception was original no less than bold and ingenious. It

was of the nature of things which, disdainful of routine and the beaten track, open up new ways to science; it was of the nature of things which sometimes lead to great and useful discoveries. In this respect it failed, but it was far from unfruitful, for, although impracticable in the form proposed by Scarenzio, it gave origin to a method which constitutes an advance in the treatment of syphilis. For this reason science will preserve and honor the name of Scarenzio.

But, to resume our subject, according to the above programme, twenty or forty centigrammes (three to six grains) of calomel were injected at a single dose. This naturally resulted in disasters, such as the following:

1. First of all, phenomena of local intolerance—namely, inflammation followed by abscess (eight abscesses in eight cases in the first attempts of Scarenzio; eighty-four abscesses out of eighty-six injections in another series, etc.). In fact, abscess was considered as an inevitable consequence of the method.

2. In the second place, acute stomatitis, sometimes gangrenous. For example, in one case an injection of forty centigrammes of calomel caused such severe gangrenous stomatitis that the patient was for some days in danger of death. In another case there was swelling of the tongue and a submaxillary abscess, which obstructed respiration.

3. At other times there were gastro-intestinal complications—vomiting, colic, intense diarrhœa, and sometimes dysentery.

4. Sometimes symptoms of mercurial poisoning occurred, with low temperature, cold sweats, palpitation, feeble pulse, syncope, albuminuria, anuria, and collapse. These symptoms led to the evacuation of the toxic focus by aspiration, or even by deep incision into the subcutaneous tissue or muscle.

5. Lastly, there were sometimes fatal results. Kaposi, Hallopeau, Lukasiewicz, and Lewin have seen several cases of death after injection of gray oil; and Smirnoff, Runeberg, and Du Castel have reported fatal cases after massive injections of calomel.

I may, however, mention here by way of parenthesis that cases of death from mercurial injections have also been reported with smaller doses, such as ten centigrammes of calomel (about

one and one-half grains). Thus, in a case of Kraus, two injections of ten centigrammes of calomel, with an interval of seven days, caused severe stomatitis, enteritis, anuria, collapse and death. At the autopsy there was found perforation of the ileum, peritonitis, and nephritis. In a case of Runeberg, three injections of ten centigrammes of calomel produced stomatitis, intense diarrhœa, epistaxis, fever, extreme anæmia, emaciation, and death. The autopsy showed deep ulcerations in the large intestine.

The possibility of eventualities of this kind is enough to condemn the method. However, in a desperate case, where everything else has failed, these massive injections might be used as a last resource. But, apart from such an exceptional situation, we must regard this method as dangerous and unjustifiable.

There are two reasons why this method should be condemned:

1. It introduces into the organism a considerable dose of an insoluble mercurial salt, without the possibility of regulating its absorption. We do not know how much is absorbed day by day, nor whether it is absorbed gradually, according to the original conception, or rapidly. On the other hand, the mercury may become encapsuled by a zone of inflammatory infiltration. All this takes place under conditions which we are powerless to regulate or influence.

To introduce a large dose of mercury into living tissues is to leave it to the chances of unknown chemical reactions, which may increase or diminish its rate of absorption, and may vary in different regions, in different subjects, and even in the same subject under different conditions. This is shown by the fact that it is not always the first injection which causes grave accidents. Again, sudden accidents have been known to result from a blow or pressure on the seat of injection, possibly owing to rupture of the cyst enclosing the mercury. An interesting observation of this kind is reported by Augagneur: A man who had received two injections of metallic mercury was subject to attacks of stomatitis on the occasion of blows on the buttocks. One day he fell on the buttocks and suffered from such severe stomatitis that the focus of mercury had to be evacuated,

and with it part of the gluteus maximus muscle. I have also observed the following curious case: A patient who had received fifty-five injections of salicylate of mercury suffered from multiple nodosities in the buttocks. It was attempted to remove these by massage, but after three or four sittings an intense stomatitis developed, although the patient had taken no mercury for several weeks.

2. In the second place, there is no possibility for the physician to regulate the medication or to suspend it when required, as in the other modes of mercurial administration. It had been suggested that a safety-valve remains in the evacuation of the mercurial deposit! But this requires an operation which is often difficult, and not free from risk.

To sum up: the method is a blind one, because we do not know the amount of absorption; it is uncontrollable, because the physician has no means of regulating it; and it is liable to serious dangers. For these reasons I condemn it absolutely.

Nevertheless, from the abortion of this method has arisen another, which is now in high favor, and which, at any rate in certain special cases, is in the first rank of antisyphilitic medications. This transformation is the result of numerous efforts, with the object of making tolerable a mode of treatment which, for the reasons I have just mentioned, was not capable of practical application. The method of massive injections did not only produce disasters; it also led to some remarkable therapeutic results. Numerous experiments were therefore made with a view of attenuating the disasters while retaining the therapeutic effect. The result of these efforts has been the transformation of the intolerable method of massive injections into a tolerable and practical method: *the method of infrequent injections.*

This transformation has been effected first of all by diminishing the doses from thirty, forty, or fifty centigrammes to doses which were free from danger and tolerable. Secondly, the injections were rendered aseptic by the precautions already mentioned. Thirdly, intramuscular injections were substituted for more superficial ones. Lastly, the least irritating vehicles were selected. Thanks to these improvements, accidents of all kinds,

which were common in the early days of the method, diminished in frequency and intensity. Abscess, which was at first regarded as inevitable, has now become exceptional, and the terrible stomatitis of former times has disappeared. In short, a treatment has been gradually constituted which is tolerable and capable of rendering useful services.

The method as now practiced consists in the injection, at intervals of eight or ten days, of moderate doses of an insoluble preparation of mercury, destined to be gradually dissolved by the chemical action of the tissues.

As regards technique, strict antisepsis is essential to avoid inflammatory complications and abscess; the needle should penetrate deeply into the muscles; the punctures should be made in the most tolerant regions of the body, especially the buttocks; the operation should be performed in two stages, to avoid the danger of puncturing a vessel, and embolism.

Numerous preparations of mercury have been proposed for this method—namely, calomel, yellow oxide of mercury, gray oil, metallic mercury, black oxide, red oxide, cinnabar, turpeth, protoiodide, sulphate, tannate, phosphate, salicylate, benzoate, phenate of mercury, and mercuric thymol acetate, etc.

But it is generally agreed that *calomel* constitutes the most energetic and most certain agent. In any case, it is this which has been most frequently used, and it is to calomel that I shall devote most attention.

CHAPTER XVI

CALOMEL INJECTIONS

The calomel used for injections requires particular care in its selection. Sublimed calomel is preferable to precipitated, which is gritty and apt to block the needle. Calomel before injection should be washed in boiling alcohol and dried. As a vehicle, glycerine, gum, oil of vaseline, olive oil, oil of almonds, and distilled water have been used. The formula generally employed is:

Calomel (sublimed)	50 centigrammes.
Sterilized olive oil	10 grammes.

One c.c. contains nearly five centigrammes of calomel (five-sevenths grain).

To diminish the pain on puncture cocaine may be added, but this has no effect on the after-pain, which is the chief objection to calomel injections.

Dosage.—The dose of calomel which can be introduced into an adult subject, without the risk of accidents such as those which result from the injection of massive doses, is impossible to determine with mathematical precision. With calomel, as with nearly every remedy, individual tolerance is subject to considerable variation. Nevertheless, an average dose, which is tolerated by the majority of patients, and which generally gives the desired therapeutic effects, may be estimated at about five *centigrammes* (five-sevenths grain).

It is needless to say that this dose is subject to numerous indications relative to the age, sex, weight, strength, and constitution of the patient, to his degree of tolerance, and to the nature of the lesions to be treated. For example, the dose should be reduced to three centigrammes for women, nervous

and excitable patients, or those of poor physique. It is also often advisable to begin with three centigrammes and increase it to five if it is well tolerated. On the other hand, the dose may be raised even up to ten centigrammes, if the indications are urgent. I have often injected ten centigrammes in patients of known tolerance, without the slightest mishap.

Direction of Treatment.—A series of injections is always required to produce the therapeutic effect desired. The injections are generally performed once a week, because it has been found that the curative effect of a dose of five centigrammes is nearly exhausted at the end of a week. From four to six weekly injections constitute a course of calomel; but this course may, according to the indications, have to be interrupted after four injections, or increased up to ten or more.

Therapeutic Value.—The therapeutic action of calomel injections may be summed up as follows:

1. They have a well-marked curative action on almost all specific manifestations.

2. This action is usually energetic and rapid.

3. There are certain cases in which they realize extraordinary effects, which are infinitely superior to those obtained by the usual methods, except in unusually large doses.

A few commentaries on each of these points:

1. For the first point discussion is superfluous. The method has been proved; and it has been demonstrated, both by the friends and enemies of the method, that injections of calomel exert a curative action on nearly all manifestations of a specific nature. It is unnecessary to cite new facts in support of this proposition.

2. There are very numerous cases in which this antisyphilitic action has been shown to be powerful and intensive, no less than remarkably rapid. This has been demonstrated many times and in all countries. The treatment by injections of calomel has been known to suppress, with unusual rapidity, a number of specific lesions; not only secondary syphilides, generally easy of resolution, but also tenacious syphilides, such as lichenoid and palmar and plantar syphilides, tertiary syphilides, malignant syphilis, gummatous ulcerations, hyperplastic glos-

sitis, phagedenic lesions, and lesions refractory to other methods.

3. The most important point is that calomel injections sometimes realize extraordinary effects, which cannot be produced by the usual remedies, unless these are used in exceptionally large and dangerous doses. I will give a few examples:

(1) A case of *phagedenic chancre* of the tongue was cured in a few weeks by injections of calomel. This chancre measured nearly three inches from behind forwards, and about one and one-half inches in thickness, and was considered by some to be a tertiary lesion, by others an epithelioma.

(2) Three cases of early *malignant syphilis* were cured rapidly by calomel.

(3) Three cases of *tubercular syphilides* were cured after three injections.

(4) A case of nasal *phagedena* due to heredo-syphilis. This lesion had remained undiagnosed for a long time owing to the obstinate prejudice which does not recognize heredo-syphilitic manifestations in adult life. Later on its specific nature was suspected, and it was treated by various antisyphilitic remedies without success, but was cured in a few weeks by injections of calomel.

(5) In several cases of *tertiary glossitis* results were obtained which would have been almost impossible to effect by pills, iodide, or inunction. One of these was a case of hyperplastic sclero-gummatous glossitis, which had doubled the size of the tongue on one side, and was deeply ulcerated. This was diagnosed by one surgeon as an epithelioma; but the so-called epithelioma was rapidly cured by a series of injections of calomel.

(6) A case of *gummatous laryngitis,* occuring in the course of malignant syphilis, caused such severe dyspnœa that tracheotomy appeared imminent. A single injection of calomel (aided by iodide) caused the symptoms to disappear in a few days.

The following is a similar case, of which I will give an abstract. A man aged fifty-nine contracted syphilis in 1864, and was treated for two years. After this he had no symptoms for *thirty-three years.* In 1897 he had a tubercular syphilide,

which was not treated. This was soon followed by laryngeal symptoms, and in 1898 a tumor was found by laryngoscopic examination occupying the space between the upper and lower cords on one side. This was diagnosed as cancerous; but after a consultation, at which I affirmed the specific nature of the cutaneous lesions, it was decided to inject five centigrammes of calomel and to prescribe iodide. Both the laryngeal symptoms and the syphilides were rapidly cured.

Lastly, I could cite numerous cases in which calomel injections succeeded where other methods had failed.

Calomel injections must therefore be regarded as constituting a powerful and energetic remedy, capable of rendering useful, and sometimes surprising, services. But, although I am one of the fervent admirers of the method, I hasten to add that there is another side to the picture, and that the method cannot be judged solely by its successes. Some of our colleagues, carried away by enthusiasm, have unwisely exaggerated the virtues of this method, and have described it as "the method *par excellence* for the treatment of syphilis," and even as an "abortive method"! Calomel, although meriting the eulogies which I have just bestowed upon it, has its failings, its inconveniences, and even its dangers.

Objections to Calomel.—In some cases it gives only moderate results; in others its action is inferior to that of inunction or ingestion, and in a few cases it fails altogether. This has been shown by numerous observers, such as Diday, Besnier, Neumann, Finger, and Gaucher, and I have many times had similar results myself. A very estimable but enthusiastic colleague has imprudently said that, thanks to injections of calomel, "the headaches, amnesias, vertigos, strokes, aphasias, formications, and all the premonitory signs of definite catastrophes, are symptoms we now know how to master." I confess that I do not yet possess the secret of "mastering" cerebral syphilis, even with injections of calomel.

In the second place, like all other methods, calomel injections are subject to *recurrences*. Syphilitic symptoms may recur even after the most remarkable cures by calomel injections. For example, the above-mentioned case of phagedenic chancre of the

tongue, which was cured in such a remarkable way by this treatment, was followed in a fortnight by deep ulcerations of the tongue. These, again, yielded rapidly to calomel, and again reappeared three weeks later, with other lesions of equal severity.

In another case a patient was treated for tubercular syphilides which had resisted several methods of treatment. He was treated with calomel injections, and the lesions disappeared in less than a fortnight. A fortnight later the same lesions reappeared *in situ*. On this occasion the injections had less effect, and another recurrence took place in spite of injections and iodide.

Sometimes even fresh lesions are produced during a course of calomel injections. One of my patients, during a course of injections for iritis of the right eye, developed iritis of the other eye. A young man was admitted into hospital for a confluent papular syphilide, and was treated with calomel injections. When the eruption began to disappear a gummatous iritis was produced, after the seventh injection. In another case paralysis of the oculo-motor nerve suddenly occurred after the fifth injection of calomel, and the same with other cases.

I have been so struck with the frequency of these recurrences, or rather new morbid outbreaks, during treatment by calomel that I am led to believe that calomel, *although exerting a powerful action on syphilitic lesions, has not a very persistent action.* This is only an impression which I have not yet verified by statistics, and I therefore give it under reserve.

Toxic Effects.—The next point to consider is whether the treatment by injections of calomel may cause such inconveniences or dangers as to constitute contra-indications.

On this question the most divergent opinions have prevailed, and practitioners are still far from agreement. I have attempted to arrive at the truth by collecting evidence from my hospital and private practice, and from certain recent publications.

For this purpose I have taken as a type *an injection of five centigrammes of calomel,* with a view to determine its physiological effects, especially as regards disagreeable symptoms,

accidents, and dangers. We will leave the curative effects aside for the moment.

The physiological effects which may be derived from such a dose are numerous and varied, but may be divided, for convenience, into five groups: painful symptoms, local reaction, salivation, intestinal irritation, and general intoxication. These different effects are not equally common, nor of equal importance. We will just deal with those of minor importance, leaving to the last those which chiefly affect the problem we are considering.

1. *Stomatitis.*—An injection of five centigrammes of calomel may cause a certain degree of stomatitis, but never the intense phlegmonous or gangrenous stomatitis which results from massive injections. It may give rise to gingivitis of moderate intensity, superficial ulceration, and slight salivation, but rarely causes intense general stomatitis with profuse salivation. The date of appearance of stomatitis after injections of calomel is not definite. It may follow the first injection, or may not appear till after a series of injections. It is naturally predisposed to by a previously bad condition of the mouth from decayed teeth, stumps, tartar, etc. It is also more common in the female sex, although women generally take more care of the mouth than men. In prescribing injections of calomel, it must therefore be remembered that women are more susceptible to stomatitis than men, and I think a dose of three or four centigrammes is sufficient for women.

These buccal complications are more common in hospital patients than in private practice. In hospital practice we have found them in fourteen per cent., but in private patients in only about seven per cent. of the cases. Portalier, who has carefully studied this question, remarks that " in persons with the mouth in good condition I have not even observed salivation. I have only seen serious stomatitis in those with antecedent chronic gingivitis. Cases of chronic gingivitis have been rather kept up than aggravated by the injections."

These results show that calomel injections require integrity of the mouth more than any other method of mercurialization. They may be dangerous for patients whose mouths are in a bad

condition, but are generally well tolerated by those with healthy gums and sound teeth. It should therefore be made a rule not to prescribe injections of calomel for patients in whom the gums are irritated, swollen, or inflamed.

In the second place, it follows that this method requires, more than any other, strict supervision of the mouth and careful attention to buccal hygiene, by brushing the teeth night and morning, and after each meal, by mouth-washes of chlorate of potash, and by the occasional application of glycerine and borax or tincture of iodine to the gums.

Under these conditions of buccal integrity and asepsis, injections of five centigrammes of calomel may be regarded as usually well tolerated.

2. *Gastro-intestinal Complications.*—These are rare, and I have only observed them in twelve cases out of one hundred and forty-seven. They consist in colic and diarrhœa, usually of moderate intensity. Once only, in a severe case of syphilis, diarrhœa was profuse, and persisted for eight days. It was in this case that ulcerative colitis was found at the autopsy, as mentioned previously. Exceptionally the diarrhœa may be slightly hæmorrhagic, remotely resembling the dysenteric enteritis observed as the result of more severe intoxication.

3. *General Complications.*—Sometimes there is *calomel febricula,* characterized by acute malaise with quick pulse and raised temperature. This febricula may occur by itself, but is more commonly accompanied by the painful phenomena which I shall shortly describe. The temperature rises at night to about one hundred and one degrees Fahrenheit, and falls in the morning. The febricula usually lasts only three or four days. There are some patients in whom it occurs after every injection. Portalier, out of four hundred injections, observed high fever with gastric symptoms in six cases, and mild febricula in one hundred and two.

Phenomena of Local Reaction.—So far we have not met with symptoms of sufficient frequency or importance to constitute real contra-indications to the method. But we have now to consider another class of complications which, on account of their great frequency and painful character, are of greater

importance. These consist in inflammatory swellings and pain.

An injection of five centigrammes of calomel is rarely free from local reaction. However, this is sometimes absent, and Edmond Fournier has observed a case in which forty-five injections of five centigrammes of calomel, given for recurring syphilides of the tongue, never caused the slightest pain. This is, however, exceptional, and there is generally local reaction in one of the following forms:

Tumefaction of the Buttock.—This generally appears on the first or second day after the puncture, and varies in degree and character. The swelling and redness begin to subside after the fourth day, and a nodosity is left, which we shall refer to later. In some cases the swelling may simulate an acute abscess.

Nodosities.—The nodosity consists in a deep swelling produced by inflammatory exudation round the deposit of mercury. It only becomes appreciable to palpitation after the tumefaction has subsided, when it can be felt as a hard sensitive nodule, varying in size from a filbert to a walnut. It generally undergoes spontaneous resolution in the course of a few weeks, but may occasionally persist for several months. According to my experience, nodosities occur in about two-thirds of the cases. We are ignorant as to the conditions which lead to the formation of these nodules. At any rate, it is certain that the same operator, using the same injection and the same instrument, will sometimes cause them and sometimes not. It is also certain that the same patient, during a series of injections, will present nodosities on some occasions, but not on others. Again, some subjects, for some unknown reason, are more liable to them than others.

Abscess.—This has become a more and more rare complication since the improvements in the technique of the method. Out of one thousand four hundred and ten injections, abscess occurred only in nineteen, or one-third per cent. These abscesses are amicrobial, and, instead of pus, contain a fluid like liquid chocolate, which is found free from microbes by bacteriological examination. They are foci of liquefying necrosis rather than

true abscesses, and as they are not caused by want of antiseptic precautions, it is difficult to see how they can be entirely avoided. The symptoms differ from those of ordinary abscess in their more insidious onset and more rapid development. They soon form fluctuating swellings under the skin, accompanied by pain, which may cause difficulty in walking. If not incised by the surgeon, they may open spontaneously, leaving a slight depression in the skin marked by a black spot. These abscesses are generally superficial, and not of great importance, but a deep abscess in the substance of the muscle may occur occasionally.

The pathogeny of these abscesses after injection is not well understood. Certain patients are more susceptible to them than others, as is proved by the fact that they occur in some patients and not in others, although all have been treated by the same liquid, injected by the same operator. In some subjects they develop after every injection.

Phenomena of Painful Reaction.—The pain, or rather the assemblage of painful phenomena which may result from injection, constitutes the stumbling-block in the method of calomel injections. It is on this point that the conflict has been waged between the partisans and the adversaries of the method, a conflict which has been prolonged to the present day.

According to some, the pain resulting from injections of calomel is intense only in a few cases, and for them the element of pain does not constitute a contra-indication for the method, save in exceptional cases. Others declare that the injections are painful in the majority of cases, and intolerably so in a great many, and for this reason they condemn the method, or only consent to it under exceptional circumstances.

This discordance of opinions is due to the variable nature of the results of injections in different subjects. One patient will experience only slight pain after injection, while another will describe it as unbearable, and will refuse to have it repeated. These results, moreover, vary in the same subject after different injections. For example, one of my patients received four injections. There was so little pain after the first two that he scoffed at other patients who complained of it; but after the

third injection he was laid up in bed with the pain and consequent lameness for several days.

There is therefore nothing surprising in the conflict of opinions. One observer will have a series of lucky cases, and will thereby conclude that injections are tolerated with little or no pain, while another will come across a series of patients in whom they cause intolerable pain, and will condemn the method as detestable. Under these circumstances there is danger in basing a conclusion on a small number of cases, and to form an unbiased opinion it is necessary to compare the results of a large number of observations.

In order to arrive at the truth of the matter, Portalier and myself have collected a number of cases, both in private and hospital practice, carefully examined with a view to the degree of pain caused by injections of calomel. The following is the result of four hundred injections in private patients:

Intolerable pain.....	12	cases, or	3	per cent.
Acute pain.....	72	" "	18	"
Moderate pain.....	155	" "	38.7	"
Slight pain.....	149	" "	37.2	"
No pain.....	12	" "	3	"

The following are the results in four hundred and seventy-three injections in hospital patients:

Intolerable pain.....	13	cases, or	2.7	per cent.
Acute pain.....	137	" "	29	"
Moderate pain.....	79	" "	16.7	"
Slight pain.....	125	" "	26.4	"
Insignificant or nil....	119	" "	25.2	"

In another series of two hundred and forty-five injections in hospital patients collected by Gastou, the pain was "acute or very acute" in half the cases, and "moderate, tolerable, or insignificant" in the other half.

At the Saint Lazare Hospital, Verchère practised sixty-seven injections of calomel, of which he carefully studied the after effects. As regards pain, he noted twenty injections quite painless, as against forty-seven which were painful in different degrees, but often very severe.

By adding these different statistics we arrive at the result that, out of a total of one thousand one hundred and eighty-five injections (a respectable figure), six hundred and thirty-seven were either extremely painful or moderately painful—that is to say, that in more than half the cases the pain after injection was considerable, in varying degrees of severity, while in less than half the cases it was slight or insignificant.

The pain generally occurs on the second or third day after the injection, rarely during the first few hours. It commences at the point of puncture, and is at first exclusively local. It is compared by patients to the effect of a blow or contusion. Sometimes there is an aching pain, and the buttock is sensitive to the least pressure; sometimes there are shooting pains which are exacerbated by movement or change of position. The pain is not always confined to the buttock, but often radiates to the thigh, or more rarely towards the loins. Sometimes it extends down the leg to the great-toe and sole of the foot, simulating sciatica.

As a natural consequence, this pain causes functional troubles, which vary according to its degree of acuteness: difficulty in sitting down or in lying on the back, difficulty in movement of the affected limb, limping, difficulty in going up or down stairs, etc. Sometimes the pain is so severe as to confine the patient to bed for several days. As regards the duration of these painful phenomena, this naturally varies with the degree of intensity. The acute pain seldom lasts more than two or four days, but some aching, with restricted movement and difficulty in walking, persist for several days longer.

In other cases symptoms of general reaction are added to the painful symptoms. The patient has then a febrile appearance, with a temperature of one hundred degrees Fahrenheit, to one hundred and two degrees Fahrenheit, and a pulse of ninety to one hundred and ten, with the usual symptoms of fever, such as general malaise, headache, loss of appetite, weakness, insomnia, etc. A combination of fever with an acute attack of sciatica will give a good idea of the appearance of the morbid condition in question.

This form is rare, and probably only occurs in four or five

per cent. of injections; but it has a remarkable tendency to recur in patients who have once been affected in this way. In fact, this febrile form of reaction to calomel appears to be limited to certain subjects. For example, one of my patients told me that "each injection of calomel causes a veritable indisposition, with pain and fever, requiring rest in bed for several days. I tried to continue, on account of the injections being good for my syphilis; but the same phenomena were invariably repeated at each puncture, and I had to give up the treatment."

Such patients have an intolerance for the method. A greater number may also be called intolerants for whom the injections are a common or even constant source of more or less painful symptoms. To insist on a method which serves them in this manner is not only a practical contra-indication, but a cruelty. It is obvious that the method does not suit them, and they must be treated in another way. They usually settle the question themselves, either by informing their doctor that they will not hear of "pricking," or by leaving him to seek another who will treat them otherwise. At the hospital they change their day of attendance, and in the polyclinic they do not come again.

What a number of cases of this kind I could mention! How many times have I heard my private patients tell me: "For heaven's sake, doctor, no more injections! Prescribe everything else, and I will obey; but as for your confounded injections, I do not want any more. They really make me too ill. I cannot bear them any longer."

But are those who are really intolerant of the method numerous? Incredible as it seems, our colleague Dr. Jullien states that in twelve years' practice he has only met with *two* patients who were in the least refractory to this method of treatment! Figures must be met by figures. Out of sixty-five patients, Dr. Portalier and myself found seven who absolutely refused to continue the system of injections—seven out of sixty-nine, which is equivalent to more than *one in ten.*

Again, at the hospital, eight of our patients left in the course of the last three months "because the injections made them too ill." And a number of others would have followed their example if we had not consented, at their request, to alter the

treatment. There never passes a fortnight in my practice without my having to give up this dreaded method, on account of the complaints of a patient, and whatever some of our colleagues may say, the question of pain constitutes an important objection in practice to the method of injection of calomel. I repeat and cannot repeat it too often: (1) For at least half the cases it is a painful method, painful to a degree which it is impossible to disregard; (2) in certain cases, which are far from uncommon, it is a method in which the pain attains an acuteness sufficient to constitute a formal contra-indication.

In order to omit nothing in this review of the accidents which may be observed after injections of calomel in particular, or mercurial injections in general, it is necessary to mention other complaints which have been brought against them. But the latter, compared with the preceding ones, only constitute rarities, or even exceptional curiosities. It will suffice to say a few words concerning them.

1. *Pulmonary Embolism.*—Accidents of this kind have been reported several times, especially by Odmanson, Lewin, Lesser, Blaschko, Möller, Epstein, Klotz, Schulze, Rey and Jullien, A. Renault, etc.

They occur as follows: Immediately, or a short time after, injection; sudden dyspnœa, respiratory distress (thirty-six to forty respirations per minute), spasmodic cough, pain in the side, tendency to lipothymia, even syncope; then on the next or following days, slightly blood-stained expectoration, and the manifest formation of a circumscribed focus of pulmonary congestion manifested by undoubted signs (fine râles, bronchial breathing, dulness, and sometimes pleural friction, etc.).

This scene is of variable duration. It is generally ephemeral, and does not exceed more than a few hours, or even an hour. Sometimes, however, it persists for two, three, or four days, with or without febrile complications. In one case it lasted for three weeks with continuous bloody expectoration.

Hitherto it has always terminated favorably—at least, if the two cases of sudden death recorded by Lewin after injections of gray oil are not attributed to the embolic process. These embolic accidents have always followed insoluble injections

(calomel, aceto-thymol, salicylate). But their pathogeny has been differently interpreted with regard to the nature of the embolus. Some attribute it to the oily vehicle, others to the fine particles of mercury, which, "however small they are, have an appreciable size under the microscope, and may by themselves obstruct the fine capillaries of the lungs." In support of this opinion have been invoked the experiments of Möller, who has produced pulmonary infarcts in animals by injecting thymol acetate of mercury in suspension in liquid paraffin.

2. *Hæmatonia, Hæmorrhage.*—It is certainly remarkable that hæmatonia is not a more or less common consequence of deep injections, in which there is risk of wounding more or less important vessels, yet only a few cases have been reported. For my part, I have only observed two cases of importance, where the amount of effusion caused considerable swelling in one of the buttocks, which became literally black from ecchymosis. In one of these cases a large sphacelus of the skin was formed.

Primary hæmorrhage is extremely rare, and nearly always insignificant.

Secondary hæmorrhage, which appears several days after injection, is rather less rare. It is caused by the track of the needle, and exudes drop by drop, sometimes lasting several days. For example, a patient at the polyclinic received an injection of calomel. Nothing in particular occurred during the first few days except a painful swelling of the buttock. Then, on the sixth day, the puncture opened spontaneously and exuded blood. For three days the blood continued to ooze drop by drop from the puncture, without the hæmorrhage being arrested. This woman tells us that she lost "more than a liter of blood."

3. Another fact, which is certainly exceptional, but none the less useful to remember, is a case reported by Lang of a hæmophilic patient who, after a mercurial injection, was seized with fatal hæmorrhage from the urinary passages.

4. Some cases of nervous accidents have been reported as the result of calomel injections—viz., sciatica, neuritis, partial paresis, trophic disorders, etc.

But such cases are most rare. Moreover, it does not appear that injections of calomel are more often liable to such mis-

haps than injections of other kinds, such as soluble injections. The only serious case of this kind which I have observed (paralysis of the extensor muscles of the foot on the same side as the injection) followed an injection of biniodide oil.

The pathogeny of these lesions is only indirectly known by some experiments carried out on animals, in which were found inflammatory lesions and degeneration of nerve fibers in the neighborhood of the nodosity caused by the mercurial injections. But it must surely be more complex in certain cases which have not yet been properly explained.

As examples, I will give a summary of the two following cases:

(*a*) *Case of Dr. de Amicis.*—Man, aged fifty-eight, affected with syphilis in the secondary stage. Injections of sublimate. At the forty-fourth injection, made between the inferior angle of the scapula and the spine, violent pain. On the third day complete paraplegia, soon followed by bedsores. Death at the end of a month.

(*b*) *Case of Dr. Racocineanu, of Bucharest.*—Man, aged thirty-three, syphilitic for two years, not diabetic nor albuminuric. Injections of sublimate. According to the author, this injection caused sudden acute pain, which increased, and compelled the patient to lay up. After this, gangrene of the foot supervened. "Seven weeks after the injection the patient presented four plantar ulcers, penetrating to the bone. The leg was quite cold and insensible. In spite of every care, gangrene of the foot took place, which necessitated amputation of the leg. Histological examination showed thickening of the arterial walls, with fatty degeneration and adhesive phlebitis of the vein."

5. Lastly, the nodosities, or their remains, consecutive to injections, may become the seat of gummatous processes. A curious example is shown by the following case: One of our patients was affected with early malignant syphilis, for which he was treated at the Seamen's Hospital at Toulon by a series of injections of yellow oxide of mercury. On his return from Paris he entered our hospital for a fresh outbreak of lesions. Several of the old injection nodosities, which were easily visible,

became the seat of large gummatous infiltrations, which resisted all kinds of treatment, and softened, ending in extensive and deep gummatous ulcerations.[1]

I have dealt *in extenso* with the advantages and disadvantages of injections of calomel. The main question which concerns us now is the following:

Is the practice of injections of calomel in moderate doses suitable as an habitual or systematic method in the treatment of syphilis?

That is to say, is it a method which can be applied indifferently to all cases of syphilis, and one which can be made use of during the whole period of treatment?

I will explain by two examples.

Take the case of a patient who presents himself with a certain syphilitic lesion. Are we authorized to prescribe injections of calomel for the cure of this lesion, whatever it may be?

On the other hand, take a syphilitic patient who has no actual lesions, but who requires preventive treatment in view of future developments. Are we authorized to prescribe injections of calomel as a preventive measure?

These are serious questions, and of great practical importance.

To these two questions, put in the terms which I have just mentioned, I do not hesitate in replying in the negative, and by a formal and absolute negative, and this for a number of reasons which I must explain, at the risk of repeating some of the arguments which have already been mentioned incidentally in the preceding remarks.

1. Injections of calomel have been spoken of as suitable for the systematic treatment of syphilis. But, in the first place, what is more contrary to clinical good sense than a systematic treatment for any disease? The physician should be guided in the treatment of his patients, not by a system or preconceived therapeutic plan, but by the actual and individual indications, both with regard to the symptoms, nature and prognosis of the disease, and to the strength, constitution, and personality of the patient, and with regard to many conditions of all kinds.

[1] Barreyre, "Accidents consecutifs aux injections mercurielles," Paris, 1896.

Otherwise, in what does the physician differ from a machine for delivering prescriptions?

2. On the other hand, and again in the name of good sense, is it not obvious—does it not follow from the very nature of the method in question, from its inconveniences and disadvantages, from the painful symptoms which arise from it, that *this method is not one of those which can be indifferently prescribed for everybody and everything?* In truth, it would be taking very little care of our patients to impose on them a method of treatment of this kind, if it was not justified by special and formal indications.

No doubt, if the method in question was unique of its kind—that is to say, the only one capable of realizing the therapeutic object which I have in view—I would resign myself to it for want of something better, and say to myself: "Here is certainly a method of treatment which runs the risk of exposing my patient to many disagreeable things, even to intense and repeated pain; but, having nothing to substitute for this method, I must use it at any cost." But such is not the situation. To be sure, for a certain group of manifestations which I have endeavored to specify above, calomel is a remedy of choice which succeeds better than any other. But for the great majority of the common manifestations of syphilis it is no better than any other. That which it effects can be done without it and in another manner. If, therefore, we have the means of obtaining the same therapeutic results without it, would it not be absurd to give it the preference over other medications which have not the same inconveniences and disagreeable effects?

For my part, I can certify to the possibility of treating and of curing the great majority of the manifestations of syphilis without having recourse to injections of calomel (and others besides), always admitting that in a small group of cases injections act more energetically and more rapidly than other methods.

And on this point I am in agreement with nearly all syphilologists. Besnier, for example, after having made a long and conscientious study of the method of mercurial injections, arrived at the conclusion *that injections should not be performed*

in the treatment of ordinary syphilis. Mauriac also remarks that "out of a hundred cases of syphilis there is not one certainly which requires treatment by injections." Again, Augagneur says: "When syphilis behaves itself in the way we most often see it evolve, it is quite useless to arm ourselves with methods of heroic pretensions"; and, after deliberate discussion, he considers that in the great majority of cases "syphilis does not require injections in order to cure it." Has not the same opinion been many times stated and restated by a number of observers, such as Renaut, Barthélemy, Verchère, etc.?

Still, if the method of injections showed itself distinctly superior to all others as a general rule, if it only had a few reverses, if it prevented, better than the others, early recurrences or remote developments, I might possibly be attracted by it, in spite of all its disadvantages. But this is certainly not the case. We know that it is a method which has its drawbacks, like any other; that it is a method which in no way prevents later outbreaks of the disease; and, in this respect, it is possibly inferior to others, for we have seen that in many cases its influence is not permanent. Therefore, if it is of no more value than others in these different points, why prefer it to others which are more inoffensive?

It is true that the following objection may be made: "But in discarding injections, you deprive yourself of a mode of treatment which is peculiarly energetic and rapid in therapeutic effect. For energy and rapidity of action are its two chief merits."

Reply: 1. If I did not require an energetic method to cure certain manifestations of syphilis, what advantage should I find in employing it, when I can realize the same effect by milder methods which are not accompanied by the risks of this energetic method? To strike hard is often useful, and in cases where this may be useful I am willing to strike hard. But to strike hard in all cases and without reason, what good is there in that?

2. Again, it is said to be a more rapid method than the others in therapeutic action. I recognize this, at least for many cases. But do I always, or even often, want this rapidity of action?

That it may be useful in certain cases, I am far from denying, and in these cases I prefer calomel. But if it is not especially useful, of what advantage is it to employ a method the risks of which you are aware of, to hasten the cure by a few days? As Augagneur has truly remarked: "In theory the superiority of the hypodermic method as regards rapidity of action is tenable; but, in practice, is it very beneficial? Do we often require mercurial saturation to be effected in twenty-four hours?"

It is unnecessary to dwell further on these reasons, for there is one especially which dominates them all, and which allows me to shorten this discussion. This reason, which, in my opinion, contains the condemnation of the method of injection as a usual method in the treatment of syphilis, may be explained in a few words.

It is that the said method constitutes a danger, and the worst of dangers, by ending in this: that *patients do not undergo treatment as they should in order to cure their syphilis.* I will explain. If there is one conviction to which I have been led by experience, it is that of the *necessity for prolonged treatment* for the cure of syphilis, or at least for subduing its manifestations. This has become for me an axiom, as also, I believe, for the great majority of physicians who have carefully studied this grave therapeutic question.

But—here again I appeal to good sense—in order to obtain prolonged treatment for patients, especially preventive treatment—that is to say, when there are no actual symptoms of their disease to show the necessity of continuing the treatment—it is advisable, or even indispensable, to offer them as far as possible the least unpleasant and repugnant method of treatment—a method which does not repel them and is not prejudicial, which does not run the risk of causing vexations, disadvantages, confinement to bed, interruption of work, and especially pain. At this price, and at this price only, can we make them follow our instructions for the whole time we consider it necessary for their cure.

But is not the system of injections of calomel precisely the reverse of a treatment of this kind? For it is the prototype, the type *par excellence,* of the *antipathetic* treatment, the type

of the unpleasant, vexatious, and painful treatment (at least every other injection is distinctly painful)—in fact, an odious method of treatment which is generally left off too soon. What will happen, and that almost of necessity, if we have made a systematic election of this method as a routine method of treatment—that is to say, if, after having submitted our patient to one or more courses of injection, we propose to continue in the same way for months or years—is that our patient will not accept this method, which is not to his taste, and with reason. To use a common expression, he will give us the slip—to his own detriment, I admit; but he will give us the slip for certain.

And then he may do one of two things: if happily inspired, he will say to himself that he is not yet cured, and to finish his cure he will find another physician who will treat him by another method; or, owing to vexation or neglect, he will decide to do nothing more, and will not take any further treatment.

In the latter case, which is found by experience to be the more common, the patient remains with untreated syphilis, or at any rate insufficiently treated. The usual termination of syphilis of this kind is tertiarism—the outbreak of some tertiary lesion at a variable and indefinite date. By good luck the lesion may be of a kind which is curable, and then the harm may not be irreparable. But if this lesion is one of those which attack the eye, the brain, or spinal cord, it is impossible to say what may be the ending of the scene.

And this is why I disapprove of the system of calomel injections, as well as injections of any kind, as a routine method in the treatment of syphilis, without denying the powerful and beneficial influence which this method exerts on certain manifestations of the disease.

I do not deny this influence at all, as is proved by what I have previously said. I should be blind if I committed the error of not recognizing this influence, nor less culpable if I did not employ it on occasion for the benefit of my patients. But this is not the question. For the moment we are only concerned with judging of the method as a routine treatment for syphilis. Regarding the question from this point of view only, I repeat with conviction that, for the different reasons men-

tioned above, and for the last in particular, the method of injections is one of those which least fulfills what should be the aim of our efforts—namely, to induce patients to undergo prolonged treatment, long enough to safeguard them in the future, after being "whitewashed" in the present.

To resume: as a temporary and provisional medication, directed against a manifestation or outbreak of syphilis, which requires energetic treatment, I accept the method of injection by calomel.

But as a routine, habitual, preventive, or systematic medication continued during the whole treatment of syphilis, I am a convinced and militant opponent.

Indications for Calomel Injections.—According to some authorities, injection of calomel is an exceptional method only, but this qualification appears to me to be too restricted and beyond the mark. As a matter of fact, in practice it is not an exception to have recourse to the method, even after carefully considered indications.

It would be more correct to say that it is a *method of special indications.* This appellation appears to me to apply exactly to the spirit of the method—a method which it would be illogical to apply indifferently to all the lesions of syphilis, but which it is legitimate to carry out under certain clinical conditions or indications.

But what are the indications for this method? These have been deduced from theoretical considerations, and by *a priori* reasoning, in the following way: "For a grave symptom an intense remedy. Therefore, all cases of syphilis which are grave by the number of their manifestations, by their abnormal and rapid progress, by the nature of the organs menaced (the eye, brain, spinal cord, etc.), also by their obstinacy and by their recurrences, are cases for injections; while moderate or benign forms should be reserved for the usual methods." More simple still is the trichotomous formula which has been proposed: "For ordinary syphilis, treatment by ingestion; for more severe syphilis, treatment by inunction; for the most severe syphilis, injections, especially injections of calomel."

There is nothing better, to be sure, than a rational induction

as a first inspiration. But, in the matter of therapeutics, everything is subordinate to results, which can only be obtained by patient, analytical, and comparative observations. For the question at issue is not to know what calomel can cure, but what it cures better, more surely, and more rapidly than any other method of mercurialization. It is a matter of experience, or, rather, of empiricism, exclusively.

But in the study which we have previously devoted to this special point, we have seen that calomel injections are peculiarly efficacious and powerful in a certain group of specific manifestations, which I have attempted to specify. We have seen especially the signal and sometimes surprising results that they may render in the *phagedena* of certain chancres; *chronic palmar and plantar syphilides; depapillating glossitis,* which is so common in the advanced stages of the disease; *hyperplastic glossitis* with a sclerosing tendency; *tuberculo-ulcerating syphilides,* especially lupoid syphilides with infiltration; *tertiary laryngitis; tertiary phagedena,* etc.

Here, for the present, are so many indications for the method, and they already constitute a respectable group.

I have said "for the present" advisedly, for no doubt the injections are not good in these cases only. In all probability they have other indications which the future will reveal.

Certain cases have been already reported in which they have rendered useful service. For example, I recall a very interesting observation by Dr. Barthélemy relative to a case of pulmonary syphilis, which had been diagnosed as "fibroid tuberculosis" by several eminent men, and which was cured by mercurial injections. But cases of this kind, and other analogous ones, are too isolated yet to enable us to draw any conclusion, and we are compelled to wait for further experience on the subject.

Again, how many points of the question are unexplored! What would be the effect, for instance, of the method of injections in pregnancy with regard to the syphilitic fœtus? What results might it give in infantile syphilis, etc.? These are subjects which, for the present, remain to be studied.

In the second place, it is necessary for me to add another indication for the method—and this an unexceptionable one—as a resource after the failure and insufficiency shown by other medications, or in cases of idiosyncratic intolerance for these medications. We are fortunate, under such circumstances, in finding a useful and powerful resource for the benefit of our patients in the method of injections.

On the other hand, it is no less evident that the method, like all kinds of treatment, has its contra-indications, and these of several kinds. For example, it is impossible to carry out in certain conditions where it is intolerable—namely, either in subjects with bad teeth and chronically inflamed gums; in cachectic or debilitated subjects, who are little able to support an active mercurialization; in subjects affected with renal disease liable to prevent the elimination of mercury; in subjects affected with disease of the liver; in diabetics, because of the local accidents which may arise from inflammatory reaction; in hæmophilic subjects (Lang's fatal case), etc.

Another point. It has been said that "it is a hospital method exclusively," because in hospital the patients have a bed, and their time to themselves in case of accidents. It is true that we ought not to prescribe a method of this kind in persons who require their liberty and the agility of their limbs, such as soldiers, laborers working on their legs, commercial travelers coming and going every day, mounting staircases and undergoing fatigue, etc. These professional contra-indications exclude the system of injections elsewhere than in hospital.

But the principal contra-indication to the method is the absence of the proper indications for its employment, for if it is necessary to repeat it once more, this mode of treatment, by reason of the inconveniences and accidents connected with it, is not one of those which can be logically applied indifferently to every patient or to every manifestation of the disease. It is a method which, to be legitimate, must be necessary—that is to say, indicated by some symptom or morbid condition of a peculiar character.

Another question is this: Would it not be an advantage to undertake the method of calomel injections from the first?—that

is to say, at the threshold of the disease, at the period of the chancre.

In this way it has been argued that the treatment by calomel injections exerts a powerful action on syphilis, often more powerful than any other. Moreover, it can be logically admitted that there is always an advantage in attacking a disease at its onset (*Principiis obsta,* according to the old adage), and to attack it by the most energetic agents at our disposal. Therefore, why not attack syphilis *ab ovo* by the most active of the methods that we have at hand? Would not this give a chance of attenuating or arresting its evolution? Would it not be better to employ intensive treatment at first than the milder methods in common usage?

Unfortunately, exclusiveness and exaggeration compromise everything. On the one hand, this would mean nothing less than generalizing this method by applying it to all cases of syphilis, whether benign, medium, or severe, for we do not know at the onset of syphilis what this syphilis will be. Therefore, it has been argued that it is right to act as if it would be severe, and consequently attack indiscriminately all cases of syphilis at their onset by the method of injections; and the enthusiasts, on the strength of some cases which, treated in this manner, only gave rise in the early period to benign symptoms, have exalted the method before they had time to put it to the proof. Without considering that, with any kind of treatment, we get cases of syphilis which are benign during the first years, they sing the praises of the method of injections *ab ovo*, claiming it as "capable of cutting short the development of the chancre from the first," as "attenuating the disease and arresting it at its onset and permanently (!) up to extinction," as "reducing it to one of the mildest infections." Thanks to it, "syphilis is no longer syphilis." Not to treat it in this manner is "to resign one's self to an abdication." They have even honored it with the term of "abortive method."

What is the result? Such exaggerations never fail to awake opposition and provoke a reaction, which itself also goes beyond the mark. In fact, the reaction results in almost general indifference—so much so that the method of treatment of syphilis

ab ovo by injections of calomel has not been systematically tried in any of our hospitals for venereal disease, and no special study on this subject has been published up to the present day.

There is nothing surprising in this. In spite of its novelty, the method in question was not in any way attractive, and it was questionable what would be gained by it. On the one hand, it was said, it is not, unfortunately, a method which is free from disadvantages and accidents, especially painful accidents even necessitating confinement in bed, or even illness; also its preventive effects are not so marvelous, judging by the recurrences which so often follow it. In the third place, we may ask whether the older methods of treatment, which have stood the test of time, have so lost their therapeutic value that we should substitute for them systematically a much more inconvenient method, beset with many disadvantages. Has not the method of ingestion, for example, been often so satisfactory as to be regarded as a cure in the present and a safeguard for the future? Do we not meet every day with patients who, after being treated in this way for twenty, thirty, or forty years, have successfully gone through the several stages of their syphilis? By what right, therefore, decry or sacrifice the older methods, which by their age have been more proved than the new? Lastly, a weighty argument (which I have already developed in the previous remarks), which condemns the method, is that, by its inconvenience and vexations, and especially by the pain which it inflicts on patients, it constitutes *the best method for preventing patients continuing treatment.*

Nevertheless, however valuable they are, these reasons should not prevail against the results of experience. But experience is here wanting, for I only mention, by the way, a few attempts instituted with this object in my practice. I have treated a certain number of patients according to the programme in question—namely, by injections of calomel at the period of the chancre, and the results were those which might be expected. That is to say, in the first place, the calomel in no way aborted the syphilis; in the second place, the disease evolved in the secondary period in the same way as when under the influence of other methods of treatment, by being limited to certain slight

lesions. Some patients appeared to be little influenced by this treatment. One of them, for example, who had been treated from the appearance of the chancre, presented four months later a confluent roseola and numerous mucous patches in the mouth, in spite of eight injections of five centigrammes of calomel.[1] The same with three or four others. But I draw no conclusion from a handful of facts, and am still ignorant, like everyone else, of what may be the result of treatment by calomel begun from the origin of the chancre and followed for a certain time. The question remains to be studied, and it is hardly necessary to add that, if an experiment of this kind is to be made, the results must only be estimated after many years.

[1] *Vide: Bulletin de la Soc. Française de Derm. et de Syph.*, 1896, p. 455.

CHAPTER XVII

INJECTIONS OF GRAY OIL AND OTHER MERCURIAL PREPARATIONS

Calomel, which we have just studied, is the principal agent of medication by infrequent injections, but it is not the only one, fortunately. Many other mercurial preparations have been proposed as answering the same therapeutic intention. I shall pass these rapidly in review, only dwelling on those which have been shown by experience to be of real value. Thus, for example, I say nothing about *yellow oxide,* used formerly, but now discarded. It is recognized that it has the same objections as calomel, and is inferior in action to the latter, which has completely replaced it in practice.[1]

1. Gray Oil. — Invented by Lang of Vienna, gray oil (*oleum cinereum*) is a mercurial preparation consisting of mercury in a state of fine division, suspended in a liquid fat. It is a kind of fluid mercurial ointment. Investigated by many physicians, especially by Le Pileur, Barthélemy, Thibierge, Gagnière, etc., and submitted to prolonged trial, gray oil is now a well-known preparation which may be judged on its own merits. I am thus authorized to state that it is a *good remedy,* a remedy of certain action; in fact, after calomel, *it is the best we have.*

No doubt it has the objections of all insoluble mercurial injections, but these are reduced to a minimum, both in importance and in frequency. It is said to have sometimes caused intolerable pain, severe stomatitis, dysenteric enteritis (fatal in one case), embolism, etc. But such accidents have generally been the result of excessive doses or faulty technique, as in

[1] Rey and Jullien, Soc. de Derm., February 27, 1896.

other cases which are always cited. When properly administered and prescribed in moderate doses, it is, as a rule, tolerable and tolerated.

Injections of gray oil are nearly always painful, it is true, but the pain, with rare exceptions, is moderate and often slight. They only rarely react on the mouth in an intense manner (three or four per cent., according to Le Pileur), and hardly ever on the intestine. They seldom cause nodosities of any importance. In a few cases they cause a kind of blood abscess, aseptic and amicrobial, which has been termed "chocolate abscess." They do not provoke general reaction or fever. This is very different to the possible and fairly common accidents which follow injections of calomel.

In evidence I will quote the following statistics of Dr. Edmond Fournier based on five hundred and seventy-eight cases:

1. Nearly always pain after injection, but nearly always moderate, or more often slight and not persisting; sometimes no pain; in two cases severe pain.
2. Never purulent abscess. Six times pseudo-abscess in the form of subcutaneous collections of blood, opening spontaneously and discharging chocolate-colored matter.
3. Three times moderate stomatitis. In one case late stomatitis appearing fifteen days after a series of eight weekly injections.

Radiographs made by Oudin and Barthélemy show that gray oil, instead of collecting in a central focus in the muscle, becomes disseminated in the form of long spindles, which separate the muscular fibrils. The metallic injection can be recognized in the muscle as fine black lines, similar to small vessels, and measuring one to four centimeters in length. (But is it so in all cases?) The same method of investigation also reveals an important fact—namely, the rapidity with which absorption of the gray oil is produced in the muscular tissue. In fact, there is a considerable difference between two radiographs taken, one immediately after injection and the other forty-eight hours later. In the latter the metallic spindles are much

more broken up and shorter. On the fourth day there are scarcely any traces of the metal.

Examination of the urine also shows this rapidity of absorption. Thus, "mercury commences to appear in the urine one hour after injection. Also, it is rare for the elimination of mercury to continue beyond a month and a half after the fifth weekly injection of three and one-half drops of gray oil" (G. Gagnière, *Nouvelles Contributions au Traitément de la Syphilis par l'Huile Grise,* Thèse de Paris, 1896).

Lastly, Gagnière has studied the modifications in the blood caused by gray oil. He has demonstrated that the corpuscles and the hæmoglobin increase after the second injection, and generally diminish after the fifth. It is hence indicated, according to him, not to give more than five consecutive injections.

It is universally agreed that there is no comparison, as regards tolerance, between gray oil and calomel. On the other hand, as regards therapeutic intensity, there is no comparison between the two agents. The one is an intensive remedy of the first order; the other is only a remedy of relatively medium activity. Therefore, we must not expect from gray oil the sudden astonishing therapeutic effects which calomel often produces; we must expect only a more moderate and slower, but sure and certain, curative action, which is, on the whole, sufficient for what we require in the generality of cases.

Therefore, by its medium action and by its easy toleration, gray oil is a remedy destined to render many and important services for which calomel would not be suitable. Calomel is only required for serious eventualities, which are happily more or less infrequent, while gray oil at all times presents itself as an appropriate agent, sufficient to realize therapeutic effects.[1] Therefore calomel should be discarded as a routine remedy for the treatment of syphilis, while gray oil may assume this rôle. The proof of this is that many physicians, especially Le Pileur and Barthélemy, use no other method for their patients, and

[1] Jullien remarks that "these two substances (calomel and gray oil) are not duplicate methods, but rather complement each other. To calomel, remarkable for the rapidity and strength of its action, belongs the treatment of urgent lesions, immediately dangerous, severe or chronic; to gray oil that of less urgent and less chronic lesions. The latter remedy is also indicated for preventive treatment."

have applied gray oil to the *intermittent method* which I proposed long ago for syphilis. It is sufficient to mention this fact by the way; I shall return to it later on.

Gray oil has many times, since Lang introduced it, changed in formula as regards mercurial composition, vehicle, and pharmaceutical details. So that it is not sufficient now to send a prescription to the chemist with the words "gray oil": we are obliged to specify what gray oil we require, and in what strength; for it is made in the strength of thirty, forty, and fifty per cent. The one most frequently used, and which we have used ourselves, is forty per cent., according to the following formula:

Purified mercury	20 parts.
Vaseline	10 "
Oil of vaseline	20 "

The *active dose,* which naturally varies according to age, sex, constitution, and weight, is about three or four drops to begin with, which corresponds to three centigrammes of metallic mercury. But it may be increased, according to the degree of toleration, the indications and effects observed, up to six, seven, eight, or ten drops. The last dose seldom requires to be exceeded. The injection is made on the average every week.

There is only one difficulty, and that concerns the posology, gray oil being measured by drops. An exact dosage thus requires special instruments, such as the syringes invented by Le Pileur and Barthélemy. But the practitioner usually carries only the syringe of Pravaz or Luer, and requires one or other of these for injections of gray oil, as well as for other injections. But with either of these, exact dosage with gray oil is impossible, because these syringes, which contain twenty drops of water, will hold a much greater number of drops of gray oil.

The number of drops of gray oil contained in a cubic centimeter is very differently estimated by different observers. According to some, it is fifty-six; according to others, sixty-eight or seventy. It naturally varies with strength of gray

oil, with the temperature of the fluid, etc. For example, it rises to one hundred and twenty drops when the oil is slightly warmed.

With forty per cent. gray oil, a cubic centimeter corresponds to fifty centigrammes of mercury, and consequently every twentieth—that is, each division of a Pravaz syringe—to twenty-five milligrammes of mercury.

Therefore, to inject seven and one-half centigrammes of mercury (the usual dose) with this oil, it is necessary to inject three divisions of a Pravaz syringe. But to inject *exactly* three divisions, or three-twentieths, by such a small instrument is almost impossible, because of the minute distance which the piston must traverse. Hence the inevitable errors in dosage, which I have convinced myself of empirically.

From another point of view, I must also point out the confusion to which the word *drop* has given rise in posology. The result of my reading and of an inquiry which I instituted on this point shows that some understand by drop, the *drop of gray oil itself*, while others mean a volume of gray oil *equal to a drop of water* (that is, one-twentieth c.c., or one division of a Pravaz syringe); others, again, admit indifferently both interpretations. Hence important errors in dosage (Edmond Fournier).

This means that to inject three drops of the oil, the piston must be limited to one-twentieth of its total course. But a thrust of the piston corresponding exactly to the expression from the syringe of a twentieth part of its contents is almost impossible to perform. If it is too weak, the thrust will expel too little; if too strong, it will exceed the dose, which is the more common event. In short, with this method of manipulation there is no precise dosage, and a precise dosage is essential with a medicament such as the one in question.

With a view to remedy this grave disadvantage, Dr. Edmond Fournier has lately designed a Luer's syringe, modified in the following way: On the one hand, the capacity is reduced to half a cubic centimeter, and, on the other hand, the barrel is elongated and narrowed. This results in considerably increasing the thrust of the piston, and renders the measurement easy

to read. It is impossible with this to mistake the dose for injection.

Another point is that this syringe lends itself particularly to the new mode of dosage which I recommend: gray oil with twenty centigrammes of mercury to the cubic centimeter. With this instrument, each division of the syringe corresponds to one centigramme of mercury. On the other hand, the easy reading of the syringe excludes all risk of error in the dosage.

In order to render the dose injected exact, one of two things is necessary—either to use graduated instruments, or to substitute for the dosage by drops a system of dosage by weight, by formulating the injection of gray oil as follows:

Sterilized olive oil.....1 c.c.
Purified mercury. . .the desired quantity: 3, 4, 5, 6, 7, 8, or 10 centigrammes of mercury.

In this way we know the exact quantity of mercury in each injection. This method is now being tried in my practice, and the results obtained will shortly be published.

2. Salicylate of Mercury.—This salt, which was introduced by Silva Araujo, has been studied since by numerous observers, especially by Tarnowsky, who is so satisfied with it as to elevate it to the rank of a favorite remedy in the treatment which he prescribes for patients during the first years of infection.

It is, in fact, an agent with an undeniable and even rather powerful specific action, although certainly inferior to that of gray oil, and, it is hardly necessary to say, much inferior to that of calomel.

Its special recommendation is its usual harmlessness. As a rule, it only causes slight pain of short duration, and is seldom followed by local reaction and nodes.[1] It is administered in weekly doses of twelve or thirteen centigrammes, which are divided into two injections:

[1] Nevertheless, in a thin patient who had some months previously received more than fifty injections of salicylate, I have seen both buttocks literally covered with hard indolent nodes. These nodes were so numerous that they felt like a bag of nuts.

Salicylate of mercury..... 4 grammes.
Oil of vaseline.....30 "

Dose: Half a Pravaz syringe, corresponding to about 6 centigrammes of mercury.

3. Thymol Acetate of Mercury.—This is still very little known, but merits attention, after the experiments of Barthélemy, Spillmann, and Étienne. It is a white crystalline salt insoluble in water, composed of thymol, acetate acid, and mercury (fifty-six per cent.). It is administered in weekly injections, after the following formula:

Thymol acetate of mercury..... 1 gramme.
Oil of vaseline.....10 grammes.

Dose: One Pravaz syringe containing 10 centigrammes of the salt.

It is said to be "very slightly painful; free from accidents—at least, serious accidents; the best tolerated of all the insoluble salts, having a remarkably sthenic action in nutrition, as shown by the rapid increase in the number of red corpuscles."

This fact is not peculiar to thymol acetate. I shall profit by the occasion given me by the analyses of Dr. Étienne to point out once more the reparative power of mercury on the blood of syphilitics.

Examples.

1. Malignant syphilis: Ulcerating syphilides, nasal phagedena, anæmia, asthenia.

At the time of the first injection:

	Red Corpuscles
February 9	3,317,000
" 24	3,658,000
May 1	4,150,000

After thirteen injections:

May 10	4,650,000

2. Phagedenic chancre, headache, asthenia, syphilitic fever. Onset at time of roseola.

	Red Corpuscles
November 10	1,333,000
" 13	1,800,000
" 20	2,580,000
" 27	3,410,000

		Red Corpuscles
December	4	4,185,000
"	11	4,340,000

Six injections.

On the other hand, it is " a remedy of certain and powerful action, with a rapidity of action which is sometimes astonishing " (Étienne). In one case, for example, it relieved during one day a formidable dyspnœa of laryngeal origin, which had persisted for several days, and for which the necessity for tracheotomy had been expected.

A woman, aged forty-two, contracted syphilis from her husband. When she arrived at the clinic, she had suffered for several days from an attack of severe dyspnœa due to laryngeal lesions. At the same time, there were gummata in most of the muscles. In the left sterno-mastoid there were two gummata the size of a small nut. " The day of her arrival, at ten o'clock an injection of thymol acetate was given, at the same time making preparation for tracheotomy at any moment. At the evening visit we found the patient calmly sitting in bed, with only slight difficulty in respiration. A tranquil night followed. Rapid cure of the muscular gummata " (Étienne).

4. Large Injections of Soluble Mercurial Salts.—The soluble mercurial salts (sublimate, benzoate, etc.) have been added to the programme of the treatment of syphilis by infrequent injections. For instance, weekly injections of sublimate have been prescribed, in doses of five and even eight or ten centigrammes.

This is a very bold proceeding; for if the absorption of the insoluble agents takes place slowly and progressively on account of their insolubility, it is not the same with the soluble agents, which should produce an immediate, or at any rate rapid, effect; hence there is a risk of acute intoxication. And this has, in fact, been observed more than once. Thus, injections of sublimate in doses of four or five centigrammes have caused after a few hours divers phenomena of intolerance, or even of acute poisoning, such as faintness and cold, feeble pulse, nausea, intestinal troubles (tenesmus and diarrhœa, even hæmorrhagic diarrhœa), slight albuminuria, vomiting, syn-

cope, and even serious stomatitis. Sprecher and Allgeyer observed five cases of acute intoxication with this method, and remark that an injection of five centigrammes of sublimate "may even endanger life."

There is nothing surprising in this. On the contrary, what is astonishing is that accidents of this kind are not more common. For it appears, according to the partisans of this method, who are better informed than ourselves on this point, that these large doses of soluble mercurial compounds are generally tolerated and remain "inoffensive" (Malherbe), while intolerance "is only an exception." From this one of two things follows: either the absorption of the said doses is only made in a progressive and relatively slow manner, and this for a reason which remains to be determined; or our present knowledge on the toxicity of bichloride administered by the hypodermic method requires revision.

"Œstreicher, who has studied the question of large doses of soluble salts, appears to have shown that the tolerance of the organism with regard to sublimate, employed by the hypodermic method, is eight or ten times greater than that admitted by authors" (Maurange, *Gazette Hebdomadaire,* 1898).

As to the therapeutic results of this audacious method, they are what one might logically expect, namely, those of intense mercurialization. No one would be surprised to hear that, when administered in such doses, sublimate exercised on certain secondary or even tertiary syphilitic lesions "a powerful, energetic, and sometimes even miraculous" action. Also we may accept without question the word of certain observers who affirm that these injections of sublimate in large doses are "comparable or even equal in immediate therapeutic effect to injections of gray oil or calomel." On the other hand, it does not appear that they exert a persistent influence on the diathesis, for recurrences after very short intervals have several times been observed.

Besides, this method has only rarely been tried, and for a very good reason. It is, in fact, because *it is distrusted.* It appears very venturesome to employ doses which may be toxic, and it is said that "when these doses are administered to sub-

jects who tolerate them, there is nothing better; but can we foresee what subjects will tolerate them? And the day when we have the misfortune to come across a patient who is sensitive to mercury a catastrophe is possible." Hence they guard against such an eventuality.

Moreover, this is perfectly well understood by most of the physicians who have extolled this method; for, after having vaunted its effects, they hasten to add that "it is a method which should not be employed in the treatment of syphilis in general, but should be reserved for special indications, such as manifestations menacing the nervous system, ulcerating syphilides, malignant or rebellious syphilis, etc."

5. A so-called modification has been added to the preceding method by the substitution of a "serum" for the water as a vehicle. Thus, Chéron has recently suggested the treatment of syphilis by weekly injections of sublimate in five-centigramme doses dissolved in twenty grammes of serum.[1] These injections of serum bichloride are said to have the advantage of being less painful than ordinary injections, to be almost free from stomatitis and buccal complications, and not to cause any toxic accident, etc. But they are special injections, differing from all others in that they are at the same time antisyphilitic by the sublimate and *dynamogenic* by the serum—that is to say, they exercise on the economy "an action of well-being and invigoration." They are said to be specially useful in asthenic and adynamic forms of syphilis.

In reality, I believe they only act in the same way as mercurial injections with large doses. How can we believe that the usual toxic action of sublimate is diminished by chloride of sodium, which, on the contrary, favors the absorption of the sublimate? Moreover, how can we believe that a weekly dose of twenty centigrammes of common salt has the singular virtue "of increasing the vitality, stimulating the functions of the economy, and increasing the power of all the systems of the human organism"?

[1] Formula:

Bichloride of mercury	25	centigrammes.
Chloride of sodium	1	gramme.
Pure carbolic acid	1	"
Sterilized distilled water	100	grammes.

Twenty c.c. of this solution contain 5 centigrammes of sublimate.

CHAPTER XVIII

INTRAVENOUS INJECTIONS

This method, which is somewhat bold, was inaugurated by Bacelli in 1893. Since then it has been used by several physicians, especially Blaschko, Dinkler, Gorl, Stoukowenkoff, Jemma, Campana, Abadie, Lane, Chopping, Uzac, etc.

The technique is theoretically most simple, and consists in this: A prominent vein is chosen and made to project by compression, as in venesection. The puncture is made with the needle parallel to the vein. The obstacle to the return circulation is removed, and the solution injected into the vein. I need not mention the necessity of antiseptic precautions.

The mercurial salts which have been used up to the present for intravenous injections are the sublimate, in doses of a few milligrammes up to one centigramme or more; the cyanide in almost the same doses; and the benzoate. These injections are made, as a rule, every other day, sometimes every day. The course of treatment by this method includes twenty, thirty, or thirty-six injections, but is not definitely fixed.

The advantages claimed for the method are: Absence of pain, which is incontestable; absence of local accidents, as a rule; absence of intoxication (this is not surprising, considering the feeble dose of the mercurial salt injected); mathematical dosage; instantaneous introduction of the curative agent in the organism; lastly, the therapeutic results obtained are said to be very good, and quite conclusive. It is said that this method has a powerful and efficacious action on all syphilitic lesions. How could it be otherwise, since it carries directly in the blood the remedy which all other methods attempt to make penetrate there, and of which we know the good effects? It was even

proclaimed at first, as is the custom, "the most certain, most rapid, and most energetic method of treating syphilis."

Nevertheless, in spite of this programme, the method of intravenous injections has made but few proselytes. It has been tried as an experiment, and then generally abandoned. Among us it may be said to be almost unused. I have recently made an inquiry on this point, and out of about fifteen of my hospital colleagues whom I interviewed, I only found a single one who had employed the method, and he abandoned it after several months' trial because "it seemed to him to be neither more nor less useful than ordinary injections, but, on the other hand, had more risks for the patient and for the physician." Personally, I confess I have never had recourse to it for reasons which I will mention.

As a matter of fact, there are reasons for this almost general refusal of a method which nevertheless has a certain therapeutic value. These reasons are:

1. First, because the method is somewhat delicate in technique, and requires a special apprenticeship. It is easy to miss the vein, to go on one side of it, or to go through it, etc. Besides, one does not always find veins sufficiently prominent for the operation, especially in women and obese subjects. Then there is often "the impossibility of finding a vein disposable after a certain number of punctures" (Blaschko).

2. In the second place, the method is not always free from objections or accidents. Thrombosis, phlebitis of more or less severe character, periphlebitis (especially when the injection has been made outside the vein), buccal irritation, polyuria, diarrhœa, etc., have sometimes occurred, without reckoning that it includes all the objections urged against the method of frequent injections without any compensatory advantages.

3. In the third place, because the therapeutic effects, whatever may be said of them, are not very encouraging, and do not seem superior to those of other methods. No doubt numerous cases of cure are found in the published observations, but there is nothing extraordinary, nothing resembling the brilliant, amazing cases, the dramatic therapeutic effects, which are often produced by calomel and sometimes by gray oil. Then there

have also been failures (I do not count this as an objection, for is there any method which has not its refractory cases?), and, what is worse, somewhat frequent recurrences, even recurrence after short periods (Lewin, Dinkler, Gorl).

This frequency of recurrences may be due to the too rapid elimination of mercury. It is said that this elimination is more rapid with intravenous injections than with any other method of mercurialization, and that it may be completed in a few hours. Hence, it follows that the method may be useful to produce an immediate energetic action, but that it does not impregnate the organism long enough to prevent recurrences.

Blaschko is of opinion that, on the whole, the treatment by intravenous injections, even in the secondary period, is less efficacious than mercurial inunction or intramuscular injection.

4. But, to come to the main point, if intravenous injections have only found a limited number of experimenters, it is certainly because they are frightened. They are positively afraid, and I confess to being the first to be afraid of them. Rightly or wrongly, everyone says in his inner conscience that it is perhaps imprudent to place the endocardium in direct and sudden contact with a toxic agent such as mercury, more especially as the experiments of Ullmann are not reassuring on this point —not because he has seen animals die after intravenous injections containing rather large doses of mercury, but because in certain cases he has found no lesions to explain death, which allows us to suppose that death in these cases results from syncope, from sudden paralysis of the heart. I am willing to admit that up to the present time nothing of the kind has been observed in man; but everyone reasons in this manner: "Is not this the history of chloroform and of cerebro-spinal cocainization, which produce no accidents in a thousand cases, but then, in the thousand and first, cause a catastrophe?" Such is the impression which I have derived from the inquiry of which I have just spoken, after opinions gathered from my colleagues. "It is," most of them reply, "a curative method which I should not wish for myself, and for a very good reason; therefore, it follows that I do not wish it for my patients."

This is fully realized by those among the partisans of the method whom I call the wise, or at least the prudent ones. They refrain from claiming it as a general method, suitable for all cases. They have confined its employment to certain exceptional cases, such as those in which it is necessary to act quickly, to surprise the enemy as it were, in cases of rapidly-invading syphilis; also in cases which threaten the eye, the brain, or the spinal cord. Moreover, they regard it, in most cases at least, as a provisory method, to be left off as soon as it has effected what was desired.

However, if not instantaneous as by intravenous injection, the introduction of mercury into the blood is effected in a very rapid manner by the usual methods of injection. Thus mercury appears in the urine one hour after the injection of gray oil. Therefore, as regards rapidity, the benefit in favor of intravenous injection is *less than an hour.* Is this infinitesimal difference sufficient to constitute an appreciable difference in therapeutic effect?

Others consider the method as especially indicated for cases in which it is wished to avoid large doses of mercury—for instance, in the tuberculous, nervous, and debilitated (Blaschko)—which truly does not say much for its therapeutic intensity.

[*Transalator's Note.*—Since the publication of the second edition of Professor Fournier's book in 1902, from which the present volume is translated, the new preparations of mercury continue to increase in number, but do not succeed in replacing the older ones. The premier place as a routine injection is taken by gray oil. This is still used by Lang of Vienna, who introduced it. Barthélemy, Levy Bing, and Wickham, of Paris, consider it the best of the insoluble preparations for injection, and Lambkin has used it with great success in the British Army for many years. Lambkin's formula is this:

Mercury	ʒiv.
Anhydrous lanoline	ʒii.
Liquid paraffin (carbolized 2 per cent.) to	ʒv.

This contains 1 grain of mercury in 10 minims, for a weekly dose.

Lambkin has also tried the perchloride, sozoiodal, benzoate, biniodide, and salicylate of mercury, but finds them less efficacious and more painful than gray oil. Levy Bing has made a comparative study of the different preparations at the St. Lazare Hospital, Paris, and finds that the biniodide, lactate, benzoate, neutral salicylate, and hermophenyl are the best of the soluble salts, biniodide being the most uniformly satisfactory; and gray oil, calomel, and basic salicylate the best of the insoluble salts. All agree that calomel is the most powerful of all injections, but that it should be reserved for urgent cases. Lannois, at the French Medical Congress in 1904, was in favor of biniodide, benzoate, gray oil, and calomel.

The more recent "dissimulated mercurial compounds," such as cacodylate, chloro-mercurate of ammonium, salicylarsenate, and mercurial nucleo-proteid, have been tried by Levy Bing, but gave much inferior results to biniodide.

As regards intravenous injections, Balzer at the French Medical Congress, 1904, regarded them as inferior to other methods for routine practice, chiefly owing to their too rapid elimination. He, however, considered them useful in cases of cerebral and ocular syphilis. Barthélemy and Levy Bing have practised intravenous injections of biniodide, which is less toxic and more active than cyanide. They conclude that the method has no advantages over intramuscular injection, except when very rapid action is required.

References.—Levy Bing, "Les Injections Mercurielles Intramusculaires dans la Syphilis," 1903; Lannois and Balzer, "Report of French Medical Congress, 1904," *Ann. de Derm. et de Syph.*, August, 1905; Louis Wickham, "Mercurial Injections in the Treatment of Syphilis," *Practitioner,* July, 1904; Barthélemy and Levy Bing, "Les Injections Intraveineuses dans la Syphilis," *La Syphilis,* February, 1905; Levy Bing, "Note sur les Injections Intramusculaires de quelques Sels à Mercure dissimulé dans le Traitément de la Syphilis," *La Syphilis,* September, 1905; Lambkin, "Intramuscular Injection of Mercury in Syphilis," *British Medical Journal,* November 11, 1905.]

CHAPTER XIX

METHOD BY INGESTION

Lastly, I come to the method which consists in the absorption of mercury by the stomach, which is called the method of ingestion, the buccal method, or the stomachic method.

This is what I may call in advance the true method of the treatment of syphilis. In any case, it is the usual and routine method, which for a long time has rallied, and will certainly continue to rally, the suffrage of the great majority of practitioners.

First of all, what is the reason of the general preference accorded to this method? It is not because of one of those therapeutic advantages which appear to be unparalleled; it is not because the method is free from the inconveniences and dangers inherent to other systems; it is because it constitutes an easy method, at the same time convenient and certain. In other words, it is a practical method.

It certainly has its inconveniences and even its dangers, and is liable to all the accidents of mercurialization. It is particularly liable to irritate the gums, and to cause disorders of digestion and nutrition, etc. But there are means of avoiding these dangers, if not always, at least in the great majority of cases, by attentive and vigilant medical directions, which enable the patient to benefit from the advantages of the medication, while protecting him from the injury that may arise from it. Moreover, among the innumerable patients treated in this way in our practice, there are not many who are affected with stomatitis, who lose their appetite, who lose flesh, who suffer and complain of their treatment. Some of them from time to time experience certain bad effects, but these effects are mild, curable, ephemeral, and without serious consequences, provided

they are taken in time. On the whole, tolerance for the treatment is almost always established. It is only a matter of supervision and therapeutic strategy.

On the other hand, what compensates greatly for the disadvantages of the method of ingestion is that this method is free from certain inconveniences and certain dangers which are inherent in other methods. Thus, it is much less liable than inunction to cause stomatitis, and, as we have previously mentioned, the stomatitis which it sometimes causes is less acute, less rapid, less generalized, and infinitely less severe than that caused by inunction. Again, compared with the method of injections, it avoids the pain and local accidents which are nearly inseparable from the latter.

But it is unnecessary to dwell further on these points, for it is not by considerations of this kind that the preference of physicians for the method of ingestion is established. The reason of this preference is quite otherwise, and lies in the fact that this method is *practical,* in the precise and complete sense of the word—that is to say, easy and convenient, as well as certain in its merits.

In fact, what is more simple than to swallow every day one or two pills, one or two spoonfuls of a mixture or syrup, or any kind of mercurial preparation? This is neither troublesome nor embarrassing. It is done in a moment; it requires no apparatus or assistance of any kind.

Compare this ideal simplicity with the practice of inunctions or injections. With the former submission twice daily to the evening rubbing and the morning cleansing; with the latter a daily visit to the physician. What a waste of time! What tediousness! what importunity!

Suppose one of us was affected with syphilis, and had to choose between these three methods: to which, except in particular indications, would he give the preference? Personally, I should have no hesitation, and I should regard the stomachic method as a relief to the tedium of my treatment—as a veritable "grace in my disgrace." I should say to myself: "With this method it is quite possible that I may experience from time to time a certain trouble with the germs or slight intestinal

disorders, which will compel me to interrupt the treatment for a few days; but that is all. At any rate, with this method, my treatment will only occupy a minute a day, and I shall not be disturbed in my occupation; while with inunction I should have to bear the incubus of evening and morning greasing and ungreasing, which would take me an hour every day; and with the injections I should have the trouble of disturbing every day one of my colleagues, to ask him to make an injection, without counting that one fine day I might be laid up in bed by the pain or the consequences of the puncture. Therefore, as I have the freedom of choice, I will choose the stomachic method, which is a relief to my ordeal."

In the same way, it is right to consider the patient's point of view by choosing the method of treatment most suitable to his occupations, convenience, and social and professional obligations—that is to say, the most simple, convenient, and especially the most practical treatment.

In all cases it is important, in order to make patients accept any form of treatment, to choose the therapeutic method which is the least inconvenient and troublesome for them; but it is for syphilis, more than for any other disease, that this precept is necessary and should be made a rule of. For these two considerations must never be lost sight of: (1) That syphilis is a disease which requires for its cure a very prolonged treatment; (2) that it should be treated, not only during its stages of activity, but also in their intervals, and later on, when nothing more exists than the latent diathetic condition.

But how can we expect a patient to consent to such a prolonged treatment, and especially to undergo treatment when he thinks himself cured, if we inflict on him a difficult, troublesome, and vexatious treatment, from which he is anxious to be delivered? We can only succeed in obtaining from him the docility and perseverance necessary for his cure by carrying out a precisely opposite programme; that is to say, by proposing a method of treatment which is easy, convenient, simple, and tolerable.

Besides, look which way public opinion has turned. Take at hazard a hundred syphilitic patients already treated, and

ask them how they have been treated. I guarantee that out of this number we shall find ninety-five who have been treated by the method of ingestion. This fact is insignificant. I do not wish an exaggerated view of my statements to be taken. I do not say that the method of ingestion merits our preference, and, consequently, is that which we should prescribe always, in all cases, and in all the conditions which syphilis may realize.

I have constantly repeated that there should be nothing absolute in the choice of a therapeutic method, and that this choice should always be subordinated to individual indications; indications concerning the patient and the disease; indications which are naturally of the most varied nature.

The method of ingestion, like all others, has its contra-indications. Thus, for example, some other therapeutic method must be substituted for it under the following conditions, which are not uncommon in practice:

1. When we are dealing with a subject affected with a previous morbid state of the digestive organs, such as gastralgia, dyspepsia, gastritis, dilation of the stomach, enteritis, etc., or having an idiosyncratic intolerance for this system.

2. When we are concerned with a patient in a state of cachectic debility, who only continues to live by a remnant of his digestive powers, would it not, in fact, be nonsense to introduce mercury into a stomach which only tolerates with difficulty a few light and special ailments?

3. In all cases where there is an indication to leave the digestive organs free for other remedies which may be required.

4. Also in all cases where a pressing and urgent danger renders necessary rapid or almost instantaneous mercurialization.

But, apart from these indications and some others which I shall mention in their proper place, the method of ingestion is, without possible contradiction, the method of choice for the physician, and that because of the different advantages which it confers, especially by its simple and practical character.

Different Preparations used for Ingestion. — Very numerous are the mercurial preparations which have been proposed as agents of mercurialization by the gastric method. It is hardly an exaggeration to say that nearly all the preparations have been tried in this mode of treatment which contemporary chemistry has produced.

I shall not attempt to give a list of them. It would be still more tedious to explain the reasons for which most of these remedies, quickly discarded, have remained in the condition of abortions.

I will confine myself to mentioning the more important of these mercurial compounds, adding to them some others, which, although forgotten nowadays, have played a certain rôle in history, and to which are attached the names of once celebrated formulæ.

Besides the two great remedies which share common favor to-day, and which we shall soon study at length (sublimate and protoiodide of mercury), the following agents have been employed at different times:

1. *Metallic mercury,* which is administered in different ways —namely, either in a state of fine division, or in the form of an ointment mixed with different powders.

A famous preparation of this kind was that which Barberousse, the celebrated corsair of Algiers, is said to have sent to King Francis I. It consisted of pills, which have long figured in the old pharmacopœias under the name of the *pills of Barberousse.*[1]

In this category may be ranged the following preparations, which have been celebrated in their day:

Plenk's gummy mercury (also called syrup of mercury), composed of mercury incorporated with gum arabic and syrup of poppy-heads.[2]

Belloste's pills. Several times modified in different ways. This is the actual composition given in the " Formulaire Pharmaceutique des Hôpitaux de Paris ":

[1] This is the composition of these pills: Mercury incorporated with the juice of red roses, agaric, rhubarb, myrrh, mastic, turpentine, cannelle, etc. (Lemery, *Pharmacopœia Universelle*).

[2] Jourdan, *Pharmacopœia Universelle,* 1828.

Purified mercury	60 grammes.
White honey	60 "
Powdered aloes	60 "
" black pepper	10 "
" rhubarb	30 "
" scammony	20 "

This is made into a homogeneous mass, and divided into pills of 20 centigrammes, which contain 5 centigrammes of mercury.

English *blue pills:*

Purified mercury	5 grammes.
Confection of roses	7½ "
Powdered licorice	2½ "

This is divided into 100 pills, each containing 5 centigrammes of mercury ("Formulaire Pharmaceutique des Hôpitaux de Paris").

Sedillot's pills, which are still sometimes prescribed:

Mercurial ointment	30 grammes.
Powdered soap	20 "
Powdered licorice	10 "

This is divided into pills of 20 centigrammes, each pill containing 5 centigrammes of mercury.

2. *Calomel,* which, after having been in favor, has fallen into complete discredit. It is very uncertain as an antisyphilitic, and has the inconvenience of causing diarrhœa and stomatitis. It forms the basis of Plummer's pills.

3. *Biniodide of mercury* is a violent toxic agent, which is seldom employed, except with iodide of potassium. It is one of the two salts contained in the too famous syrup of Gibert, of which we shall speak later.

4. *Binoxide of mercury.*

5. *Black sulphide of mercury.*

6. *Acetate of mercury,* the basis of a celebrated preparation introduced by a German charlatan, Keiser, under the name of "Keiser's sugar-plums." No doubt it is as a panegyric on this

remedy that Linguet wrote his "Cacomonade," a kind of epilogue to Voltaire's "Candide."[1]

7. *Cyanide of mercury,* recommended by Duchatalet.

8. Divers mercurial salts which have only been in vogue for the moment—proto-nitrate, proto-tartrate, turbith, manganate, etc. More recently several other preparations have been introduced in the therapeutics of syphilis, especially the three following:

9. *Peptonate of mercury,* recommended by Martineau. It has the disadvantage of not being a definite chemical compound. "We can make peptonic preparations holding mercury in solution, but the proportion of the metal is very variable in these compounds, according to the mode of preparation; so that the peptonate of one chemist is not that of another, and that of one chemist is also not always the same" (Pouchet).

Ammoniated peptonate of mercury is administered in pills of the following composition in the Paris hospitals:

Ammoniated peptonate of mercury..	2 grammes.
Powdered opium.....	50 centigrammes.
Extract of guaiacum.....	1 gramme.
Powdered guaiacum.....	1 "

Make 100 pills, and coat with ethereal solution of tolu. Each of these pills contains 2 centigrammes of the ammoniated peptonate of mercury, or 5 milligrammes of sublimate combined with the peptone.

10. *Tannate of Mercury.*—This has been claimed, according to custom, as "the best of the mercurial preparations, for on the one hand it is free from all the accidents (digestive troubles, stomatitis, etc.) to which the other mercurial salts give rise; on the other hand, it has a rapid action on the most severe lesions of syphilis."[2]

Unfortunately, it is far from having fulfilled such fine prom-

[1] "La Cacomonade," "Histoire Politique et Morale," Cologne, 1766.

[2] This is the formula proposed by Lustgarten:

Tannate of mercury.....	1 gramme.
Tannic acid.....	50 centigrammes.
Sugar of milk.....	4 grammes.
Powdered opium.....	5 centigrammes.

For six pills. One of these pills to be taken half an hour after meals (P. Raymond, "Notes on the Treatment of Syphilis in Germany and Austria").

ises. It has been known to cause stomatitis and diarrhœa, like all other mercurial compounds. Moreover, it has a capital fault, which condemns it before any clinical experimentation—*it is not a definite compound.*

One of our great chemists has recently told us that "the tannate of mercury does not exist chemically. I can easily make you a series of bodies containing mercury and tannin, all different from each other; but at present I am unable to make you a definite substance, always identical and meriting the name of tannate of mercury. What I made for you to-day would not be the same as that which another chemist would compose, or what I should compose to-morrow."

What confidence is to be placed in a medicament of this kind?

11. *Salicylate of Mercury.*—This is a much more definite preparation, with a somewhat powerful antisyphilitic action, in a daily dose of five to ten centigrammes. It is to Silva Araujo, of Rio Janeiro, that we owe the first investigations on this compound.[1]

Protoiodide and Sublimate.—Of all these remedies, there are two, and two only, to which public favor has remained faithful. These two remedies, proved by long experience, have been mentioned previously; they are the sublimate and the protoiodide. They have been said to be the "pillars" of mercurial medication by ingestion, and, for my part, I do not contest the title.

Sublimate (deutochloride or perchloride of mercury) was introduced long ago into the therapeutics of syphilis, but it is to Boerhaave and Van Swieten that is due the high favor which it has not ceased to hold up to the present day.

Chemically it is a solid white crystalline salt, soluble in thir-

[1] Silva Araujo, "Salicylate of Mercury and its Application to Syphilis and Certain Dermatoses," *Journ. de Med. et de Pharm.*, Paris, 1887; Bruno Chaves, "The Medico-chemical Study of Mercury," Bahia, 1887; analysis in the *Annales de Derm. et de Syph.*, 1888, p. 228.

Among the recent preparations may also be mentioned *phenate of mercury* (Gamberini, Schadek), which is said to be well tolerated and not to cause intestinal irritation. This is the formula according to Schadek:

Phenate of mercury.....60 centigrammes.
Powdered lycopodium } .....āā q.s.
Balsam of tolu }

For thirty pills. Dose: Two to four pills every day (Raymond, *loc. cit.*).

teen times its weight of water, more soluble in alcohol. It has an acrid metallic taste which is very disagreeable. It forms the basis of two very celebrated preparations in common use—namely, *Van Swieten's liquor* and *Dupuytren's pills.*

1. *Van Swieten's liquor,* as now made in France, has the following composition:

Distilled water	900 grammes.
Alcohol, 90 per cent	100 "
Bichloride of mercury	1 gramme.

The strength is thus one in one thousand, so that each tablespoon of the solution contains exactly sixteen milligrammes of sublimate, or about one and one-half centigrammes.

Two remarks on the posology:

(*a*) The actual liquor of the French Pharmacopœia is not the old liquor of Van Swieten. It is much stronger than the latter, which signifies the amount of the older doses.

(*b*) Van Swieten's liquor has not the same formula in all countries. Thus, the French liquor is stronger than that of the Spanish Pharmacopœia, and weaker than the English.

2. *Dupuytren's pills* are now composed according to the following formula:[1]

Bichloride of mercury	1 centigramme.
Extract of opium	2 centigrammes.
Extract of guaiacum	4 "

Sublimate also serves as the basis for different preparations, the names of which at least should be known—Hoffmann's

[1] Diday, as a pupil of Dupuytren, is better informed than anyone on the true formula of these pills, as they were administered in 1832, 1833, and 1834 in the practice of his teacher. But this formula, relative to the dose of opium, is very different to that found everywhere to-day. This is the formula according to Diday ("Pratique des Maladies Veneriennes, 3rd ed., p. 416):

Bichloride of mercury	30 centigrammes.
Aqueous extract of opium	10 "
Extract of guaiacum	3 grammes.

For thirty pills. In this formula the dose of extract of opium contained in each pill is ½ centigramme, while it is 2 centigrammes, or six times as much, in the present-day formula.

The latter dose is excessive and useless. From this point of view, therefore, I think the old formula of Dupuytren preferable to the modified one, which unfortunately is now consecrated by custom.

pills,[1] Chomel's pills,[2] Cuisinier's syrup,[3] Larrey's syrup[4]—not to mention a number of other panaceas exploited by charlatans, all naturally "guaranteed without mercury," but all with a basis of sublimate.

Protoiodide of mercury is a salt of a greenish-yellow color, changing with the light, almost insoluble in water, and insoluble in alcohol.

It was introduced into therapeutics by Biett, who recognized its antisyphilitic properties (1831); but it is to Ricord that its high position is due. *Ricord's pills,* known to all the world, have the following formula:

Protoiodide of mercury	3 grammes.
Extract of thebain	1 gramme.
Thridace	3 grammes.
Confection of roses	6 "

For sixty pills.

Each pill contains five centigrammes of protoiodide.

Sublimate and protoiodide—here are two excellent remedies at our disposal. Which shall we choose?

Well, we shall not make any choice between them, for we can do better than that. We shall employ both according to individual and particular indications, which may in a given case cause us to prefer one to the other.

I often hear one or other of my colleagues say: "Certainly, for my part, I only use protoiodide; it is a good remedy"; or inversely: "I cannot abandon the old sublimate; it is a perfect agent." Now, these exclusive preferences are absolutely contrary to the true medical spirit, which should make a rule of adapting and appropriating to a patient and to a pathological situation the remedy which, empirically, is most suitable to either.

Let us act in this spirit, and instead of choosing by *a priori*

[1] Composed of sublimate, distilled water, and bread crumbs.

[2] Composed of equal parts of sublimate and extract of opium (½ centigramme for each pill).

[3] *Vide supra.*

[4] Composition: Sarsaparilla, guaiacum, sassafras, borage, senna, China-root, elder, 500 grammes; bichloride of mercury, hydrochlorate of ammonia, and aqueous extract of opium, āā 25 centigrammes; Hoffmann's liquor, 2 grammes. Dose: 20 to 60 grammes daily.

preference for one or other of these two agents, let us consider the advantages and disadvantages of each of them, and to what indications each of them seems more especially to apply.

Proceeding methodically in this way, we can range the elements under three heads—their action on the mouth, their action on the gastro-intestinal system, and their curative effects.

1. *Action on the Mouth.*—As regards their *salivating action,* a marked difference separates protoiodide from sublimate. It cannot be denied that protoiodide is an irritant for the mouth; it is a *ptyalogogue.* Sublimate affects the gums much less; it is even stated that it never affects them, which is an error. The truth is that, in small or medium doses, it is inoffensive for the mouth; but in larger doses it has the same action as all the mercurial compounds. Only, as we are not obliged to use large doses—at least, as a rule—to obtain the desired therapeutic result, it follows that, in curative doses, sublimate only rarely causes symptoms of buccal inflammation. And I shall point out shortly what advantage we can obtain under certain circumstances from this relative immunity of the mouth to sublimate.

On the contrary, protoiodide is what may be called a salivating remedy, and this must always be borne in mind, in order to avoid the occurrence of affections of the mouth which may result from this remedy.

No doubt protoiodide is less salivating than calomel, especially when the latter is given in large doses. It is also less salivating than mercurial inunctions, and in a less dangerous manner, as we have previously seen. But it is salivating to a certain extent, and this is the principal objection which can be made to it, for in all other respects it constitutes an excellent remedy.

Moreover, let us be precise, for precision is necessary with a remedy which is in common and daily use. What is the salivating dose?

First of all, let us deal with what are called *idiosyncrasies.* Thus, there are certain subjects whose mouths will not tolerate protoiodide in curative doses. This is not common, but authentic. Inversely, there are others who will tolerate almost any

dose. I have seen a number of patients in whom the mouth was not affected by daily doses of fifteen, twenty, or twenty-five centigrammes.

Dr. Barthélemy recently told me that one of his patients had tolerated daily doses of fifteen centigrammes for the first week, thirty centigrammes for the second, and forty-five centigrammes for the third week, without any buccal accidents. A young woman, of whom I have already spoken, took thirty-four of Ricord's pills in one day, and escaped with slight inflammation of the gums without true stomatitis.

But these are only exceptions, or curiosities. Let us consider cases of a common kind.

(1) With regard to the degree of buccal tolerance for protoiodide, there is a great difference in the two sexes. Undoubtedly, a woman's mouth tolerates protoiodide much less than that of a man, and this is the more unexpected because a woman generally takes more care of her mouth than a man, and is also nearly always free from an intense cause of buccal irritation, which is extremely common in men—the use or abuse of tobacco.

(2) In the second place, what is, in either sex, the usual degree of buccal tolerance for protoiodide?

For men, we may say this:

(*a*) A daily dose of five centigrammes is, with rare exceptions, absolutely inoffensive for the mouth.

(*b*) Very often a daily dose of seven to eight centigrammes has no harmful effect.

(*c*) In eight or nine cases out of ten a dose of ten centigrammes (two of Ricord's pills) is tolerated without evil effect, provided that the mouth is previously in good condition, and is kept so during treatment, with a few short intervals when the gums appear to be touched.

(*d*) It is not uncommon for a certain time—a fortnight, for example—for larger doses (twelve, fifteen, or even twenty centigrammes) to be tolerated without buccal reaction.

On the whole, therefore, *we may consider a daily dose of ten centigrammes of protoiodide as the average dose of buccal toleration in men,* susceptible individuals always excepted.

In women the buccal tolerance is much less, so that for them—

(*a*) A daily dose of five centigrammes often has no effect on the gums. This is a matter of daily experience. I generally commence treatment with this dose (one of Ricord's pills), and in the great majority of cases this does not react on the mouth.

(*b*) But exceptions to this rule are more common than in men. Thus, we sometimes hear patients complain of the mouth even with the small dose of five centigrammes. We then find, not a true stomatitis, but a certain amount of tension, or slight inflammation of the borders of the gums, and sometimes looseness of the gum behind the molar teeth. In some cases of this kind we may discover nothing objectively appreciable, and this is a point to which I must draw attention incidentally. In certain women the action of mercury only manifests itself by a neuralgic condition, a kind of painful erethism of the dental system, without manifest lesions. I have had a case of this kind under observation for several months. One of my private patients, after a simple daily dose of five centigrammes of protoiodide, suffered from an almost general odontalgia, "setting all the teeth on edge," as she said. Being uneasy about this symptom—for she is very proud of her teeth, which are very fine—she came to me more than twenty times to have her mouth examined, and I invariably found it in a state of absolute integrity.

But this is not all. It is not very rare to see this dose of five centigrammes cause in women not general, but circumscribed stomatitis, of slight or moderate intensity. As examples of this kind, I will mention two cases which have occurred during the last few months. Two young women, whose buccal condition had not been supervised, presented themselves with true stomatitis after daily doses of five centigrammes of protoiodide. Both of them were small, thin, and puny, and of light weight, which is not without importance in this respect, since, according to the physiologists, the consideration of the weight ought to be taken into account in fixing the dose for the individual. Facts of this kind are eminently instructive, for they

show that it is always essential to supervise the patient's mouth, whatever may be the dose of mercury administered.

(*c*) The average toleration of the mouth for protoiodide in women is limited to about seven or eight centigrammes.

(*d*) Beyond this dose intolerance becomes habitual. There are few women in whom the mouth tolerates without irritation a dose of ten centigrammes (two of Ricord's pills). With this dose stomatitis is nearly always imminent, and seldom fails to occur if the treatment is continued.

To be sure, it is sometimes necessary to give this dose, or even to exceed it; but how? First by strict hygiene and attention to the mouth; then by only continuing treatment with this increased dose for a short time, or by proceeding by alternate periods of treatment and rest at intervals; lastly, by suspending treatment as soon as any sign of stomatitis appears.

To resume: (1) Buccal tolerance for mercury is much less in women than in men; (2) the average tolerance for protoiodide as a daily dose may be reckoned at ten centigrammes for a man and seven or eight centigrammes for a woman.

2. *Action on the Digestive Organs.*—In this respect there are notable and curious differences between the two preparations under consideration.

Everyone knows that sublimate has a violent toxic action, and that a great part of its harmful effect acts on the digestive organs. It is not surprising, therefore, that in therapeutic doses it determines in a rudimentary manner some of the phenomena by which its toxic action is manifested.

But it is a curious fact that in therapeutic doses it affects the stomach more than the intestine. It only rarely causes diarrhœa—at least, if a certain dose is not exceeded—while it often disturbs the stomach, even in moderate doses.

Thus, a number of patients during a course of treatment by sublimate complain of the stomach. They experience gastralgic pains, cramps, and strange sensations, which they refer to as "colics, twisting, pinching, weight in the stomach," etc. This may be called *sublimate gastralgia,* and is often so severe that patients are obliged to suspend the use of the remedy.

As a rule, this gastralgia is temporary, and disappears with

cessation of the treatment. It may, however, persist for some time. Sometimes also it gives place to dyspepsia, which may be persistent. I have met with several patients who, after having undergone prolonged treatment by sublimate, said they could not digest as they could before, and had become subject since then to malaise, fatigue, and irritability of the stomach, which they did not know formerly. A point to notice is that this irritating action of sublimate on the stomach is seen more often in women than in men. In doses not equal, but smaller, the female stomach supports it less than ours. This led me to say some time ago that sublimate is not a remedy for women. Its unpleasant taste is repugnant, and disgusts them. It is true that we can spare them this inconvenience by prescribing it in the form of pills, but then it only offends the stomach still more. I remember that at Lourcine the liquor of Van Swieten was baptized by our patients with the soubriquet of "casse poitrine."

However, there is no need to exaggerate these objections, for they only occur in certain subjects and in a certain number of cases. On the contrary, it is often tolerated by the stomach, especially if care be taken not to give exaggerated doses, to prescribe it according to certain rules which we shall define shortly, and especially not to prolong its administration.

The last point in particular is important. Sublimate is not one of those remedies like iodide or bromide of potassium, arsenic, bicarbonate of soda, etc., which may be given for long periods. Even when it is well tolerated by the stomach, it is only for a time, after which it begins to become offensive, and to cause harm. I estimate this time at three or four weeks, rarely longer. In my practice I have been led empirically never to prescribe sublimate treatment for my patients longer than a month at the most, and I have often had to reduce them to twenty days, to be resumed after the stomach has had a rest. This practice is infinitely preferable as regards gastric tolerance to prolonged treatment, and I recommend it as the result of experience.

For protoiodide it is different. First, it is generally better

tolerated than bichloride; secondly, when it is not tolerated it is the intestine which it affects more often than the stomach.

It is much better tolerated than bichloride, and in most cases determines nothing more than transient colic with only moderate diarrhœa. Very often it causes no sign of intolerance and no appreciable symptom, so much so that patients are sometimes surprised or alarmed at this apparent mildness of the remedy.

On the whole, therefore, protoiodide is a remedy which is easily tolerated—at least, from the gastro-intestinal point of view.

It may sometimes, however, determine some disorders of this system (incidents rather than accidents). But then it is less the stomach than the intestine on which it acts. It is rare for the stomach to be actually affected by this remedy. At the commencement of treatment some complain of cramps in the stomach or gastric colic, but this is only slight and ephemeral, and that is all. From this point of view, therefore, protoiodide differs from sublimate, for it hardly ever determines what the latter often produces—namely, immediate gastralgia and consecutive dyspepsia.

On the other hand, it acts more than sublimate on the intestine. Diarrhœa is fairly common, or rather, with it attacks of transient diarrhœa are more common. There is first of all what I may call the diarrhœa of apprenticeship. When protoiodide is prescribed for the first time to a patient, and especially to a woman, some initial phenomena of colic and diarrhœa must be expected. These are seldom absent, but only last for a day or two, after which tolerance is established.

In the second place, it is fairly common during the course of treatment, when the remedy has been well tolerated for a certain time, for an attack of diarrhœa to suddenly occur without apparent reason, which lasts for a few hours or a day or two, and then ceases. I imagine that these attacks of intercurrent diarrhœa (apart from extrinsic causes) may be due to some chemical reaction accidentally produced between the mercurial salt and some ailment, but this is only a hypothesis.

More rarely diarrhœa becomes established at a certain stage

of the treatment, and becomes permanent or subject to recurrence. In this case the intolerance is definite, and the indication is to suspend immediately a medication which would cause harm if continued.

Apart from these few disadvantages, which rarely attain a real importance, protoiodide is a remedy which is generally tolerated. It constitutes what has been justly called a mild treatment. This is well appreciated by patients who, having taken sublimate and protoiodide by turn, have become excellent judges of the question. As a patient recently said to me: "With the protoiodide all goes well, but with the sublimate it wants a stomach of iron to resist it."

Therapeutic Effects.—Lastly, to terminate the comparison which we are following, it remains to compare the two remedies with regard to their therapeutic effects.

On this point I can be brief, for if there existed a marked difference between the two, relative to their action on the morbid symptoms, the question at issue would not even present itself. Experience would have long ago decided the superiority of one over the other.

But there is nothing of the kind, for both are excellent remedies. Both have an active and most marked influence on syphilitic manifestations, so much so that they cannot be differentiated from this point of view. To give the palm to one, it seems to me, would be an injustice to the other.

I shall not deny a personal preference for the protoiodide, but this preference results from indirect considerations. Moreover, I confess in advance there are cases (of which we shall speak in their proper place) where protoiodide is incapable of realizing what is obtained by the bichloride.

Besides, there is something better to do than attempt to establish the superiority of one of these remedies over the other—that is, to try and get the most out of both of them, and to find the indications which each of them satisfies more specially. On these lines there are two points to note:

1. Protoiodide sometimes realizes intense therapeutic effects better than sublimate, and this for an indirect reason—namely, because its dose can be raised without affecting the stomach.

If a large dose is required on account of a serious or rebellious lesion, we are soon stopped with bichloride by phenomena of gastric intolerance, while with protoiodide we have more margin, and, if I may use the expression, more elbow-room to proportion the doses to the desired effect and obtain a more powerful therapeutic action.

For example, we may often succeed for a time in maintaining the protoiodide up to doses of fifteen to twenty centigrammes a day, without causing accidents. On the contrary, if the daily dose of three or four centigrammes of sublimate is exceeded, we are generally obliged to beat a retreat before the symptoms of gastric intolerance.

2. In the second place, protoiodide and sublimate do not appear to me able to supplement each other at every stage of the disease. Protoiodide is certainly more suitable than sublimate in the early stages of syphilis, and sublimate more applicable to the more advanced stages of the diathesis. I am ignorant of the reason of this, and only speak empirically.

In any case, I have remarked more than once that sublimate, administered in the first stage of syphilis, only exercises on secondary lesions an incomplete action, both from the curative and preventive points of view—that is to say, it only brings them to an end slowly, and often allows them to be reproduced. I am inclined to think, therefore, that in the early stages of the disease its therapeutic influence is not equal to that of protoiodide, which is certainly, in my experience, more active at this period. Not long ago, for example, I saw in private a young man who, after treatment for three years by Dupuytren's pills, with occasional intervals, was still affected with a palmar syphilide and desquamative glossitis. No doubt checks of this kind may occur after treatment by protoiodide, but I think they are less frequent than with sublimate.[1]

Inversely, it appears to me that in the advanced stages of the disease mercurialization by sublimate is more *appropriate* to the nature of the lesions and more active. It is there in its proper place, and is better than protoiodide, which is certainly

[1] This is an opinion which experience has confirmed more and more. I regard it as certain that protoiodide exercises a much more intense and much more curative action than sublimate on lesions of the early stages of syphilis.

less efficacious at this period. In any case, it combines better than the latter with iodide of potassium to constitute what has been called the mixed treatment.

But it is hardly necessary to say that these matters of distinction are so difficult and so delicate that, after having observed them, or believed to have observed them, many times, I still ask myself whether I have judged them well and wisely. These results of comparative therapeutics I believe to be true, but I should not be so bold as to regard them as definitely proved, and I submit them to the control of my colleagues.

Having completed this parallel between the two chief agents of mercurial medication, let us now review the principal points which result.

1. With sublimate there is little salivation, but major objections of gastric intolerance.

2. With protoiodide there is salivation, but gastric tolerance is more easily assured.

3. From the therapeutic point of view, the effects of the two remedies are much the same, but more intense effects can be realized with protoiodide, on account of greater liberty to raise the doses.

What are we to conclude from all this? It seems to me that from the practical point of view three deductions may be made:

1. That there is no exclusive preference to be accorded either to sublimate or to protoiodide, for both are capable of rendering useful services.

2. That either must be prescribed, according to the indications derived from a particular case. Thus, to mention only two examples, we should choose sublimate for subjects in which the bad state of the mouth would not support the salivating action of protoiodide, and protoiodide in subjects in whom the delicate state of the stomach would not tolerate sublimate.

3. Lastly, that, apart from any particular indication, preference should be given to protoiodide as a common or routine remedy, and this for two reasons; first, because it is, as a rule, better tolerated than sublimate, more easily handled, and milder; secondly, because buccal intolerance for protoiodide is

certainly more rare than gastric intolerance for sublimate. Thus, there are many subjects who support protoiodide without buccal accidents, but there are fewer who tolerate sublimate without gastric troubles.

It is for these reasons that protoiodide has nowadays become a favorite remedy. It has been called the "file-leader" of mercurial medication. It holds, in fact, the first rank, which I think will be difficult to dispute.

Pharmaceutical Preparations

Certain questions of an exclusively practical nature now present themselves for our examination.

First, under what *pharmaceutical forms* should one or other of the two remedies with which we are dealing be administered?

1. Sublimate is generally prescribed in solution or in pills. The usual solution is Van Swieten's liquor, of which I have already spoken. This liquor is irritating to the stomach if care is not taken to dilute it, and it is advisable to dilute it considerably. A tablespoonful may be given in a glass of some vehicle suitable for masking its objectionable taste (syrup and water, rum and water, peppermint or honey, etc.). It is still more simple to give it in milk. Milk has been vaguely said to modify bichloride by changing it with albuminate; in any case, it renders it tolerable to the stomach.

When the same remedy is given in the form of pills, it is generally as *Dupuytren's pills*. Each of these contains one centigramme of sublimate, two centigrammes of extract of opium, and four centigrammes of extract of guaiacum. But this formula appears to me to require revision. In the first place, what is the use of the guaiacum? Of what value is this inert and useless remedy? In the second place, the dose of opium is too large, for when it is prescribed as usual as two or three pills a day, a dose of four to six centigrammes of opium is absorbed daily, which is an excessive dose, and not free from objections in certain cases. Why so much opium,[1] when Van Swieten's liquor, which is often well tolerated, contains none?

[1] It must not be forgotten that in the true formula of Dupuytren each pill contained only a minute dose of opium, about 3 milligrammes (*vide* p. 163).

I incline, therefore, to think that the old formula of Dupuytren might be modified with advantage in the following way:

Bichloride of mercury
Extract of opium } .....āā 1 centigramme.
For one pill.

In any case, this dose of opium has always appeared to me sufficient for the object in view—that is, to assure gastric tolerance for the sublimate.

2. Protoiodide can only be administered in the form of pills, owing to its insolubility. These pills are known all over the world as the famous *Ricord's pills* (p. 183). This formula, however, appears to me open to the same objection which I have just mentioned in the case of Dupuytren's pills. It contains too much opium—namely, more than 16 milligrammes in each pill. So that with the usual dose of two pills a day the patient takes more than three centigrammes of extract of thebain daily. This is certainly excessive and useless. It therefore seems to me that the formula of my chief would gain by the following modification:

Protoiodide of mercury.....5 centigrammes.
Extract of opium.....1 centigramme.
For one pill.

Such is the formula I employ, and it is generally well tolerated. Moreover, it is easy to increase or decrease the dose of opium in proportion to the degree of individual toleration. Besides, since the opium has no curative action, what advantage is there in systematically combining it with mercury, and for the whole duration of mercurial treatment? To prescribe it at first as a precaution and to insure toleration is very good; but when toleration is insured, it is only useless, if not even harmful. Personally, I omit it as soon as I think it is of no further use, to resume it if there is a fresh indication.

This is only a practical detail, but a detail of major importance. When mercurial pills are prescribed, they should always be made of soft consistency, because hard pills may not be absorbed. In some drug stores Ricord's and Dupuytren's pills

are made by the thousand in advance, and are left to grow old in bottles while waiting for sale. But these pills after some time become exceedingly hard, and eventually as hard as cherry-stones, so that the finger-nail makes no impression on them; they rebound like shot when they are thrown on the floor, and would make good projectiles! In this state it is obvious that they cannot be absorbed.

I have many times in my private practice seen the results of mercurial treatment change almost in a day from the simple fact of the substitution of suitable pills for others hardly worthy of the name. Here is the last case of the kind which I have observed.

A young man of seventeen consulted me for a confluent papular syphilide and some other secondary symptoms. I prescribed a pill of five centigrammes of protoiodide daily. A fortnight later there was no effect. I doubled the dose in spite of his age, prepared to reduce it on the least indication. Ten days later still no effect, either therapeutic or physiological. I then asked to examine the pills which my patient had been taking, and found them as hard as gunshot. I then prescribed the same pills, but with the advice to only accept those which were of soft consistency. Ten days later there was already a great improvement, which was followed by a rapid cure of the rash.

Special Indications

When and under what conditions should we administer one or other of these remedies—protoiodide or sublimate?

It is the custom to take them at bedtime, several hours after the last meal, or morning and evening, when they are given in two doses. I think this is a bad practice, for mercury is much better tolerated by the stomach when it is taken before meals or immediately after. Sometimes, even, when there is slight gastric intolerance, it is well to give them during meals. Personally, this is what I have arrived at after having tried all methods: when the patient is taking only one pill, I advise him to take it before the principal meal, which is generally late dinner; when he is taking two pills a day, I prescribe them

at intervals as far apart as possible—that is to say, one before breakfast, and the other after the evening meal.

However small the dose prescribed, it is often an advantage to divide it when one has to do with delicate stomachs. A woman, for instance, who will not support a pill of five centigrammes of protoiodide may tolerate it easily if it is divided into two, one half being taken in the morning and the other at dinner.

Dosage

I come finally to the most important question — that of doses.

I shall commence by stating that, as a rule, mercury is not administered in its true or efficacious dose; most often it is below this dose. There is an actual fear of it, not only by the patient, but often by the physician. I know this by the evidence of patients, by the prescriptions they bring to me, which I always have the curiosity to read, by conversations I have had with certain chemists, etc. I could cite many examples on this point, and of the most convincing nature.

In this way a number of patients, said to be treated, have only been submitted to insufficient, timid, and necessarily impotent medication, without mentioning those who have never undergone any treatment at all. In proof of this, I mention the following examples:

I was recently consulted by a young man of twenty-eight, who thought he was affected with a "skin disease." He was greatly astonished when I told him that this skin disease was nothing else but a tubercular syphilide. "That is impossible," said he. "I have had syphilis, it is true, but I ought to be cured, for I have been treated, and well treated; here are my prescriptions." But what did these prescriptions show? That he had been treated for eight or nine months by protoiodide, but in what doses? In daily doses of three to five centigrammes; never more! But do such doses constitute a treatment for a subject of this age and size? What could be expected with regard to preventive effect, if this is the result? To speak plainly, this patient had never been treated.

Now, this history is that of about fifteen patients out of twenty. I do not hesitate to say that fifteen out of twenty patients in private practice only receive treatment of this kind, in absolutely timid doses, and inactive as a safeguard for the future. Further, sometimes mercury is only prescribed in infinitesimal doses—actually ridiculous.

One of my first patients in private was a Spanish lady affected with an enormous serpiginous syphilide of three years' duration. She had been treated with a daily dose of a *milligramme* of sublimate, and this dose had never been exceeded! When I proposed to administer a dose at least twenty times as great, she was afraid, and requested to see Dr. Ricord in consultation, which I naturally agreed to. Ricord confirmed my prescription, and the result was that the lady was cured in a few weeks.

A third example: Last year I was visited by a patient from the country, forty years of age, big and robust, who consulted me for an ulcerating syphilide. According to the prescription which he showed me, he had undergone treatment for two months by twenty-five milligrammes of sublimate divided into forty pills, one of which he took every day; that is to say, his daily allowance of sublimate was five-eighths of a milligramme, or about fifty times smaller than the proper dose.

And this is what is sometimes called syphilis which has been treated! It would be better to call it syphilis abandoned to expectation under the mark of an inert treatment. It behooves us to avoid such errors for the benefit of our patients, by employing mercury like any other remedy—that is, by prescribing it in an efficacious dose, necessary both for its curative and for its preventive action.

What is this dose? It is always difficult to answer a question of this kind, for it has been truly said with regard to medicamental doses that the only good one is *that which cures,* whatever it may be. But this dose which cures is naturally very variable in different patients and according to symptoms, and many complex conditions.

However, for mercury, as for every remedy, there is what may be called an *average dose*—namely, the dose which, with-

out suiting everybody, suits the greater number. Let us consider this first, always making reservation for different amendments which may be necessary.

1. With regard to sublimate, the average efficacious dose may be estimated approximately as follows: For an adult man of average constitution, three centigrammes daily; for a woman under the same conditions, two centigrammes daily.

2. For protoiodide, the average efficacious dose seems to be approximately: For an adult man, ten to twelve centigrammes daily; for a woman, seven or eight (one centigramme equals about one-seventh grain).

These are the doses in which I think these two great agents of mercurial medication should be prescribed to obtain definite results, either with regard to curative effects, or, what is still more essential, preventive effects as a safeguard for the future.

But the average dose is not always the *efficacious dose;* the latter is very complex, and may vary considerably. It would be wandering too much from my subject to study here the many conditions which affect it in one way or another. I will only mention as examples two principal ones—one concerning the quality of the symptom to be influenced, the other the quality of the patient to be treated. There is, in fact, what I may call the *dose for the symptom* and the *dose for the patient.*

1. *Dose for the Symptom.*—All the manifestations of syphilis are not equally influenced by the same dose of mercury or of any mercurial preparation. There are some which a small dose suffices to disperse, and others which require a much larger dose. There are some which only yield to very strong doses.

Let us take two extreme cases, to make the comparison more striking. Roseola soon disappears with the daily dose of one of Ricord's protoiodide pills. On the other hand, to administer (as I have seen done more than once) one Ricord's pill daily in cases of cerebral syphilis is equivalent to dissimulated expectation. To give mercury in this dose to a patient affected with cerebral symptoms is, to speak plainly, to leave him without treatment.

Further, lesions of the same organic system—the cutaneous system, for example—are not all equally amenable to the same

dose of mercury. Thus, it is a common experience for generalized syphilides to yield to mercurial doses which are quite inefficient for circumscribed, localized, or regional syphilides.

Again, certain cutaneous lesions are especially rebellious. As a type of this kind I may mention certain forms of palmar dermatosis, which, under the improper name of palmar psoriasis, often appear at a late stage in the disease, eight to twelve years after infection. These are generally admitted to be extremely obstinate, and only disappear after exceptionally energetic mercurial treatment.

And the same with other examples which I might mention. In fact, certain manifestations of syphilis have their special doses, which is in specific posology the *dose for the symptom.*

2. *Dose for the Patient.*—It is a common thing with all medicaments not to act equally in equal doses in all subjects, and mercury is no exception to this rule. But it is necessary to specify that there may be, in different subjects, unexpected variations with regard to the efficacious mercurial dose which are impossible to foresee, and which are only learnt by experience. Thus, there are subjects who are only acted upon by doses which the majority of patients could not tolerate. The following is an example of this kind:

A few years ago I attended a young woman for one kind of specific lesion—namely, a papulo-tubercular syphilide of the lips and chin, with almost constant recurrences. I struggled for a long time with this syphilide unsuccessfully, till I discovered empirically the dose which suited this patient. But this dose was five to six centigrammes of sublimate daily; smaller doses had no effect, but this dose cured the lesion. This dose, which is considerable absolutely, is even more considerable relatively, for the patient in question was a young woman of rather small and delicate physique. Many robust men could not tolerate six Dupuytren's pills a day for several weeks! But this patient supported them without any gingival irritation, diarrhœa, or gastric symptoms, because this was the *personal* dose in her case. This individual dose, or *dose for the patient,* cannot be prejudged. It results from empiricism, and is only determinable by the results of observation.

CHAPTER XX

IODIDE OF POTASSIUM

Of the two great remedies with which we are armed against syphilis, the one has been dealt with in the preceding pages, the other remains to be studied. This is *iodide of potassium.*

It was Wallace, of Dublin, who first tried iodide of potassium in syphilis, and showed its energetic action in this disease. In 1836 he published in the *Lancet* the first results of the trial of this new remedy. Ricord then adopted this remedy, and recognized its more particular application to a special class of syphilitic lesions—those of the tertiary period. It is Ricord who, by his experiments, by his teaching, and by his authority, has rendered this remedy popular among us. Since then iodide has remained as an undisputed agent in the therapeutics of syphilis. More fortunate than mercury, it has not experienced the many contradictions and formidable opposition which the latter has undergone.

Iodide of potassium is a white salt, crystallizing in large cubes, inodorous, but with a sharp and disagreeable taste. It is very soluble in water, less soluble in alcohol. It is marvelously constituted for absorption and diffusion in the organism; in fact, it appears in the urine about twenty minutes after ingestion. With regard to the rapidity with which it is absorbed, some interesting experiments were practised on a subject affected with ectopia of the bladder.[1] In this subject the ureters opened on to the exterior about three inches above the pubis, so that the urine could be collected from the moment when it began to drop from the ureter. In this way the presence of iodide was found after the following times:

[1] *Medico-Chirurgical Transactions*, London, 1867.

After ingestion by the stomach.....14 or 15 minutes.
After placing on the tongue.....14½ "
After subcutaneous injection.....20½ "
After injection into the rectum....23 "

On the other hand, impregnation of the economy by iodide soon becomes general. The presence of this salt has been found chemically in all the secretions, especially in the saliva, bile, lachrymal secretion, milk, and even in the urine of infants suckled by nurses submitted to iodide treatment. Iodide has therefore all the qualities of a remedy which is easily absorbed and rapidly diffused.

What interests us most is that iodide has a most powerful antisyphilitic action. Without the least exaggeration, it may be called a marvelous remedy, sometimes working miracles. When administered in a certain order of syphilitic lesions—namely, tertiary lesions—it improves, attenuates, and resolves them, with an intensity of action and a rapidity which is truly extraordinary. It is wonderful, for instance, to see it alleviate almost instantaneously, and then disperse in a short time, certain painful phenomena, such as specific neuralgias, or the acute pain of certain exostoses. I have in my notes the history of a patient affected with a very painful tibial exostosis, who had been unable to sleep for a fortnight. On the first day when iodide was administered he had some rest, and on the second night he slept well.

It is also marvelous to see its resolutive and curative action on tertiary gummatous lesions, on gummatous syphilomas of the skin or mucous membranes, especially those of the palate and pharynx. The same with exostoses, hyperostoses, tertiary lesions of the tongue and muscles, visceral infiltrations, etc.

It is to iodide that are due the extraordinary cures, of which numerous examples are reported in the journals, or related by practitioners for the amazement of their colleagues. These observations include cases of phagedena which were cured, as if by magic, as soon as they were submitted to this heroic remedy; cases of so-called lupus yielding to iodide in a few weeks; even more incredible cases of comatose patients, apparently on the verge of death, returning to consciousness and

life by means of iodide; also cases of cachectic or pseudo-phthisical subjects, with apparently one foot in the grave, resuscitated by iodide. Of the numerous cases of this kind which I could produce I will mention the following:

In 1873 a young woman entered the Lourcine Hospital with terrible phagedena of the foot. She was pale, emaciated, and apparently in an advanced stage of decline, and as she had a large cavity at one apex, I regarded her as both syphilitic and phthisical. No one would have given her more than a few weeks to live. To satisfy my conscience rather than with the hope of any therapeutic result, I prescribed iodide and mercurial inunction. But, much to my astonishment, this woman began to revive, and was literally transformed, regaining her appetite and gaining flesh, while at the same time the lesions of the lung and of the foot became rapidly cured. It was soon evident that I was mistaken in one of the lesions, and that the so-called tuberculous phthisis was nothing else but syphilitic phthisis. In short, four months later this moribund patient had become a stout and robust woman, having regained her former strength and health; and, instead of leaving the hospital by the small door of the mortuary, she walked out of the front door in a flourishing condition.[1]

And this is not all, for iodide can accomplish still more than this, and can do what no other remedy can do—namely, resolve tumors; it resolves testicles as large as the fist and as hard as wood; it resolves tumors in all situations, in the cellular tissue as well as in the visceral parenchyma, and tumors of all sizes, from that of a nut to that of an orange, a fœtal head, or even larger. And iodide can do this at any stage of syphilis up to advanced periods remote from the beginning of the disease. As an example, I may mention the case of an enormous gumma which developed fifty-five years after infection, and was cured by iodide in six weeks!

This marvelous curative action is due to the iodide itself, and not, as has been supposed, to the action of liberated mercury. It has been said: "No doubt iodide acts in a wonderful

[1] The history of this remarkable case was reported in full before the Paris Academy of Medicine (Union Médicale, 1878).

way on tertiary lesions, but this is not due to its own action. It acts by liberating the mercury previously deposited in the tissues, by dissolving it and restoring it to the circulation. What it seems to effect is done in reality by the exhumed mercury." But this singular doctrine will not hold before clinical observation, for the simple reason that iodide exerts to the full its antisyphilitic action even when it has not been preceded by mercurial treatment. Cases could be counted by the thousand in which it has cured severe specific lesions in subjects who have never absorbed an atom of mercury.

It is, therefore, by itself a powerful antisyphilitic, and produces these results without injury to the general health. Apart from some disorders, which we shall mention directly, it is, as a rule, well tolerated by the economy. It even stimulates the appetite and improves nutrition. Owing to its special action in the disease and its action on the organism, it may be termed a perfect remedy.

Iodism.—But there is another side to the picture, for this great remedy is not free from disadvantages, objections, and even dangers. It is necessary to consider these in detail for two reasons—first, because it behooves us to know thoroughly what may be caused by a remedy in such common use; secondly, because certain symptoms which result from it may lead to the most unexpected and regrettable diagnostic errors.

The accidents which may result from iodide are numerous and varied, and require classification after a certain method. They are usually described according to systems, but I prefer to follow another plan by classifying them according to their relative frequency. This appears to me to have the advantage of exposing them according to their order of clinical importance. Proceeding in this manner, we may divide them into three groups—those of common occurrence, those which are more rare, and those which are exceptional and idiosyncratic.

1. Those which form the first group can hardly be called accidents; they are better termed disadvantages. They are three in number—namely, the iodic taste, coryza, and acne.

The *Iodic Taste* is only a slight annoyance, and consists in a salt or metallic taste which patients experience who are taking

iodide, especially noticed in the morning. Women are particularly liable to this, and imagine wrongly that it is perceptible to others as "bad breath."

Coryza is the most common symptom resulting from the ingestion of iodide, and may almost be called constant, as few subjects escape it. This is a well-known fact, even by the public, who will tell you that they cannot take iodide without having a cold in the head. In fact, this coryza, like a cold in the head, is characterized by snuffling, with a sense of nasal obstruction, running from the nose, sneezing, local pain radiating to the frontal sinus, headache, etc. It varies more or less in different subjects; in some it is slight or medium; in others it may be intense from the first day of treatment, and cause continual sneezing and the soiling of several handkerchiefs a day.

The nasal discharge is not the same as that of common coryza; it is more serous and less muco-purulent. At first it consists of a kind of gray phlegm, very fluid, not turbid, wetting the handkerchief without leaving yellow spots, and sometimes suddenly escaping from the nose before the patient has time to stop it. It varies in duration, sometimes disappearing in a few hours, in other cases lasting during the whole administration, but in a less acute form than at first. In its milder forms it is nothing more than an inconvenience; in more severe forms it is an actual indisposition, comparable to a bad cold in the head.

Acne.—This is also a common consequence of iodide. What is called iodic acne consists in eruptive lesions exactly resembling common pustular acne, in the form of small red pimples, with a pustular top. Each of these pimples is formed by a red inflammatory papule, round in contour, slightly projecting, and surmounted by a yellow pustule, which breaks and forms a scab. The papules vary in size from a pin's head to a pea; sometimes they are larger, and resemble a boil.

What iodide produces is not an eruption of acne, but only a limited number of acniform pustules. There are seldom more than four or six at a time, but unfortunately they recur. Each pustule dries up and disappears after a few days, but others

arise. As a rule they become less abundant in proportion to the length of treatment. On the other hand, they are troublesome, owing to the fact that they generally occur on the face, more rarely on the neck, trunk, and limbs.

These two common symptoms of iodism, acne and coryza, are very liable to recurrences. They are reproduced in the course of several administrations of iodide, so that patients who have been apprenticed to the remedy know what to expect as soon as they resume the iodide. "It is iodide you have ordered me again," said one of my patients the other day. "I shall cut a pretty figure in a few days with a pimply and running nose!"

2. The second group includes accidents of a more uncommon kind, but which are met with occasionally. First, the two complications which we have just studied may occur in an exaggerated form.

The *coryza* may be serious, with excessive nasal discharge, nasal swelling, redness, and pain in the nostrils, incessant sneezing, redness and puffiness of the eyelids, violent headache, etc. This coryza may be so severe as to cause patients to refuse to take iodide again. I know a subject who is so sensitive to this remedy that he is affected with a coryza of this kind in a few hours after the first dose. Three times he attempted it, and three times the same result occurred, so that "he would not for anything in the world consent to swallow another drop of this abominable remedy."

In the same way there are cases where, instead of a few scattered papules, a veritable acniform eruption is produced with numerous papulo-pustules, voluminous, inflammatory, or furunculoid, which disfigure the face. Needless to say, patients whose faces are affected in this way soon abandon a form of treatment which disfigures and "compromises" them.

We next come to what may be termed *iodic grippe*. This is an assemblage of catarrhal symptoms of acute onset, and closely resembling the invasion of influenza. This condition is important to know on account of the diagnostic errors which may arise from it. Suppose you have prescribed iodide for a patient to-day; to-night or to-morrow morning you may be

hastily summoned, and find the patient in a shocking condition —laid up in bed, agitated, and anxious, complaining of violent headache, breathing with difficulty, and unrecognizable as regards his physiognomy—that is to say, with a red and swollen face, œdematous eyelids, swollen and quasi-erysipelatous nose, etc.

I have been called out of bed a dozen times in the course of my practice for cases of this kind. They tell you: "Come quickly; we do not know what is the matter with your patient. Yesterday he was quite well, and dined as usual, but to-night he is seized with a strange disorder: he cannot breathe, he is red and swollen all over. We think he has got erysipelas," etc. This is simply iodic grippe following the first dose of iodide of potassium.

If we analyze these numerous and diverse symptoms, the first things that attract attention are: œdematous swelling and redness of the face and eyelids, sometimes complete occlusion of the eyes by palpebral œdema, redness and œdema of the conjunctiva, redness and swelling of the whole nose, erythema of the nostrils. At first sight the appearance is that of erysipelas, or the commencement of acute eczema, or œdematous urticaria. On the other hand, there are symptoms of acute coryza, with nasal obstruction, abundant nasal discharge, sneezing and epiphora, etc. Then there are general symptoms: fever, malaise, continuous agitation, insomnia, intense headache, with a sensation of fulness of the head and shooting pains. The patient says he feels as if his head would burst, etc.

Sometimes the following symptoms are added: sore throat, with redness and swelling, sometimes with œdema of the uvula; raucous voice, due to congestion of the larynx; dyspnœa, resulting probably from similar congestion of the bronchi.

Such is the picture, which resembles the onset of influenza—(1) by the nature of the local symptoms: coryza, epiphora, sore throat, hoarseness, dyspnœa; (2) by the general symptoms of fever: severe malaise, intense headache, nervous anxiety, agitation, etc. Hence the name of *iodic grippe* which is given to this group of phenomena.

In its evolution there are two points to note—on the one hand,

these diverse symptoms occur almost suddenly, to attain their maximum in a few hours; on the other hand, they are only of short duration, like most acute intoxications—alcohol, for example. After the following day all these alarming symptoms have considerably abated, and on the third or fourth day it is all over.

Except for the possible but rare addition of laryngeal and pulmonary complications, of which we shall speak shortly, it is a pathological condition without gravity occurring with apparently grave symptoms. But the symptoms are always distressing to the patient and alarming to his friends.

When the physician has the clue to such a situation, there is no difficulty. He knows that he has just given iodide to his patient, and sees that the phenomena have appeared a few hours after the first doses of the remedy; the connection between cause and effect is obvious. But suppose a physician is called in unexpectedly to a patient he has not seen before, whom he does not know to have taken iodide, or even who denies having taken it, what will be his diagnosis in this strange assemblage of morbid symptoms? But such surprises are not rare in private practice, for the reason that men of the world are seldom treated by their family doctor for syphilis, and it is the family doctor who is sent for in cases of this kind. In this way, iodic grippe has many times given rise to the most diverse and singular errors. I have a whole series of cases in my notes where it has been mistaken—at least, temporarily—for erysipelas, urticaria, eczema, measles, tonsillitis, influenza, asthma, etc.

Of the accidents which form the group which we are studying, that which we have just spoken of is certainly the most important and the most useful to know in practice. However, several others deserve special attention, such as the following:

Neuralgic Pains.—It is not uncommon for iodide to determine pseudo-neuralgias in the form of vague, painful sensations, seldom limited to the situation and course of a nerve, such as pains in the head and orbit, and especially in the jaws. Some patients complain constantly of different kinds of pain in the jaws directly they take iodide. This is especially observed in women. One of my clients said to me the other

day that iodide never failed to "tighten the jaws." What are these maxillary pains? It is impossible to localize them.

One meets occasionally with subjects, especially women, in whom iodide causes dental pain, or rather a kind of hyperæsthetic state of the dental system. In such cases I have often had the teeth examined by competent dentists, without any morbid condition being found to explain these peculiar pains. Yet this painful erethism is sometimes severe enough to make patients give up the treatment. I have in my practice a young woman who can never support iodide for this reason.

Sialorrhœa.—Iodide sometimes causes a certain degree of salivation. This in no way resembles that of mercury, and has neither the abundance, odor, nor inflammatory phenomena of the latter. It is a mild sialorrhœa, causing no injury to the mouth, and may be compared to the sialorrhœa of pregnancy.

Ocular Conjunctivitis, or *Iodic Scleritis,* consists simply in more or less redness of the ocular conjunctiva, occasionally complicated by œdematous chemosis.

Iodic Purpura.—In certain subjects iodide determines a petechial eruption, which I have described under the name of iodic purpura (*Revue Mensuelle de Médecine,* September, 1887). There is no doubt as to the pathogenic relation of this eruption to iodide. In fact, some persons are affected with this form of purpura while they are taking iodide, and exclusively under this condition. I have seen some patients attacked with purpura up to ten times, with an equal number of administrations of iodide.

This iodic purpura has a predilection for the anterior surface of the legs, which it affects symmetrically. It rarely occurs on the trunk. As a rule, it is discrete, and composed of miliary or lenticular petechiæ of a deep red color, not disappearing with pressure, completely painless and non-pruriginous, and therefore often unnoticed. I have, however, seen it become confluent in a few cases.

3. The third group includes accidents of an exceptional nature. It would be very considerable if all accidents were included which have been attributed to iodide. In fact, we

could make a complete pathological study of these, as in the case of mercury. For example, it has been accused of causing atrophy of the testicles; impotence; "falling of the breasts"; albuminuria and Bright's disease; numerous nervous disorders, such as weakness of memory, hebetude, delirium, hemiplegia, coma, general paralysis, dementia, paraplegia, etc.! But none of the last are supported by scientific demonstration, and it is therefore unnecessary for us to consider them.

On the other hand, there are a number of other iodic accidents which are unfortunately proven—some of no great importance, but others really serious, sometimes even severe. Thus, it must always be borne in mind that in exceptional cases iodide may cause:

(1) Phenomena of gastric or intestinal intolerance (nausea, vomiting, and diarrhœa).

(2) Epistaxis, hæmoptysis, or rather bloody expectoration, consisting in the expulsion of a small quantity of bloody serosity. Hæmorrhagic diarrhœa has also been reported, but requires confirmation.

(3) Fluctuating swellings of the salivary glands, especially the parotid, constituting iodic mumps.

(4) Localized œdema of the face, especially the eyelids and lips. One of my patients could not take a single dose of iodide without presenting an œdema of the upper lip, which I saw myself several times in this patient.

(5) Urethral discharges. I have several times observed urethral discharges develop during a course of iodide treatment without any other provoking cause; moreover, I have seen them repeated several times after several administrations of iodide. They only consist in a very slight clear urethral discharge, and always disappear spontaneously after suspension of treatment.

(6) Fluctuating diffuse swellings around tendons and articulations. Till lately I had never seen anything of the kind, when by chance an undoubted and well-marked case was brought before my notice. In a young medical student iodide of potassium three times caused the following group of accidents: inflammatory swelling of the perimalleolar tendons of both legs;

hydrarthrosis of one knee; subcalcaneal tarsalgia, absolutely identical with the well-known gonorrhœal tarsalgia.

(7) Nervous phenomena: "vertigo, formication, uncertainty of movement, weight in the lower limbs, somnolence, inability to work, difficulty in speech," etc.—symptoms sometimes grouped under the title of iodic intoxication, but which I have not yet observed.

(8) Important and sometimes severe eruptions: occasionally fatal. These severe "iodidides," as they have been called, form one of the most interesting chapters in dermatology, of which I will confine myself to a short description. They occur under very different types, of which the three following are the most common and the most important:

(*a*) The *bullous type*, described under the name of iodic pemphigus, is formed by an eruption of bullæ, produced with a variable amount of confluence in various parts of the body, especially the face, neck, and upper extremities.

(*b*) The *furunculo-carbuncular type*, characterized by inflammatory tumors which resemble furuncle or carbuncle.

(*c*) The *pustulo-crustaceous type*, forming ulcero-crustaceous lesions which resemble exactly syphilides of the same name. This is *par excellence* the insidious type of iodic eruptions, in that it assumes such an objective identity with tertiary syphilides as to deceive the most expert observers. It is impossible, I may say, not to be deceived, and most often the differential diagnosis can only be established by considerations which are independent of external signs.

Objectively, the resemblance between these iodic eruptions and certain ulcero-crustaceous or tuberculo-crustaceous syphilides may be complete. I have often put side by side some patients affected with iodic eruptions and others with syphilides, without finding, by objective examination only, any semeiological differences between the two kinds of lesions. Gémy has reported a curious case in which a patch of iodic eruption, which was juxtaposed to other patches of a syphilitic nature on the face, could not be distinguished from the latter by any appreciable difference.

Moreover, it is very common—more common than is gener-

ally supposed—for these iodic eruptions to be attributed to syphilis, and numerous errors of this kind could be mentioned. The following is an example:

A young patient, whom I had treated and cured two years before for a tuberculo-crustaceous syphilide of the lower limbs, came to me with an eruption exactly identical in appearance, but situated this time on the neck and shoulder. I ordered him to resume the iodide, but he replied that he had already taken two grammes a day for some weeks, as he had been advised to do from time to time. I then told him to double the dose. Ten days later he returned with fresh patches of the eruption. I examined this eruption with great care, fearing an error of a medicamentous kind, although the patient had already several times taken iodide without the slightest accident. But, in truth, the objective characters seemed exactly those of crustaceous syphilides, so that after careful examination I persisted in my diagnosis, and advised treatment to be continued. Twelve days later the eruption again appeared, with the same syphilitic aspect. Then I left off the iodide, and prescribed only milk diet, laxatives, baths, poultices, etc. After six days there was much improvement, and complete disappearance of the eruptions in a fortnight.

From this fact, which impressed me very much, and which I have always remembered, I have concluded that it is always necessary to think of the possibility of an iodine eruption even when the objective characters of this eruption resemble in the highest degree those of a syphilide.

This error is not unavoidable, for there are certain signs which reveal the iodic nature of the eruption, if not always, at any rate in most cases. These are:

(i.) *Rapidity of Invasion.*—An iodic eruption always appears suddenly, and passes rapidly through the vesicular or pustular stages to the crustaceous stage, which stimulates syphilides. A syphilide takes much longer to develop in this way.

(ii.) *Initial Form of the Eruption.*—When the commencement of the eruption is observed, it is seen to arise in forms which are not typical of syphilis, such as vesicular, bullous, phlyctenular, furuncular, carbuncular forms, etc. It is also

possible, in an eruption already mature, to find the above initial forms, which imply another origin than syphilis. For example, in one of my patients with an iodic eruption on the face resembling syphilis, two bullæ situated on one of the ears showed a process different to syphilis.

(iii.) *Inflammatory Character of the Areola.*—The iodic eruptions, which are more acute and more phlegmasic than syphilides, often betray their nature by a bright red areola, very different to the brown or ham colored areola of syphilides.

(iv.) *The base* is softer, and although it may show a certain resistance, due to inflammatory thickening, has not the dry hardness of the syphilitic tubercle.

(v.) *Suppression* of the cause is the criterion *par excellence,* for the iodic eruptions do not long survive suspension of iodide treatment. As soon as iodide ceases to be ingested, they cease to increase, and, with rare exceptions, soon fade and disappear. The question of diagnosis is then decided.

On the whole, therefore, the real difficulty lies in thinking of the possibility of an iodic eruption. If it is not thought of, the error is fatal. If it is thought of, there is further evidence by the history of recent ingestion of iodide. Diagnosis is then made, either from some of the above-mentioned signs, or, in the absence of these, by suppression of the treatment.

Occasionally the iodic eruption may assume a *mycotic type,* formed by large tumors in the form of macaroons or tomatoes, with a deeply ulcerated surface. This is a malignant form which is almost invariably fatal.[1]

(9) I come, lastly, to an order of accidents which are happily very rare, but the most important of all by reason of their great gravity—namely, *iodic œdema of the respiratory passages*—laryngeal and pulmonary œdema. We have already noted the tendency of iodide to cause œdematous swellings. These occur in the pituitary membrane, the eyelids, conjunctiva, uvula, etc., and may also affect the larynx, trachea, and bronchi.

These laryngeal and pulmonary œdemas of iodic origin are not, as is wrongly said, imaginary dangers. They have been

[1] *Vide* J. Hutchinson, "A Smaller Atlas of Illustrations of Clinical Surgery"; Canuet and Barasch, "Malignant Iodidide of Mycotic Form and Fatal Termination" (*Archives Générales de Médecine,* 1896).

demonstrated, the one by the laryngoscope, and the other on the post mortem table. Examples:

In one of Huchard's patients iodide of potassium determined at the same time œdema of the eyelids, conjunctiva, uvula, and larynx. Signs of glottic œdema in the form of two swellings in the arytenoid region were demonstrated with the laryngoscope. At the autopsy of a patient who died of laryngeal and pulmonary accidents caused by ingestion of iodide there was found œdema of the upper part of the larynx, the vocal cords, and epiglottis, and acute congestion of both lungs.[2]

The clinical picture corresponding to lesions of this kind consists in the normal phenomena of acute laryngeal and pulmonary obstruction—namely, difficulty in respiration, especially in inspiration, stridor, cough, dyspnœa, and orthopnœa—in short, all the phenomena of urgent asphyxia requiring tracheotomy.

In such conditions, tracheotomy has been performed several times, and Ricord in 1856 related the following case: A patient was admitted to the Midi Hospital for some syphilitic lesions, but was otherwise in good health. A small dose of iodide of potassium (fifteen grains a day) was prescribed. Before he had absorbed this dose, he was attacked with severe iodism, coryza, swelling of the eyes, swelling of the throat, aphonia, and œdema of the glottis with threatening asphyxia, and all this in a few hours. The asphyxia became so urgent as to require tracheotomy. "Without tracheotomy, this patient would have surely died," said Ricord.

Other cases which necessitated tracheotomy have been reported by Huchard, Fenwick, and others. Even death has occurred as the termination of this scene, as in the following case of Laurie Adair. A young woman of thirty was treated with iodide for syphilis; the next day she was affected with sore throat; the night of the following day she was suddenly attacked with acute dyspnœa and stridor. The symptoms increased to such an extent that tracheotomy was decided upon, but, owing to slight remission of the symptoms, the operation was post-

[1] *Vide* thesis by Elizabeth Bradley, which contains several cases of this kind ("L'Iodisme," Paris, 1887).

poned. Soon afterwards the patient died. What a responsibility for the physician, and what responsibility for a remedy in common use!

However, there is consolation in the fact that cases of this kind are only the rarest exceptions. They are more exceptional, for example, than the fatal accidents of chloroform. Personally, I have prescribed iodide during thirty-eight years in private practice and in hospital for thousands of patients, and I have never observed a case similar to those which I have just mentioned. This may no doubt be the result of chance, for I have no guarantee that to-morrow my statistics, which are white to-day, will not be marked with a black spot by a catastrophe of this kind. Nevertheless, from the result of my practice up to the present day, the excessive rarity of these disastrous cases is apparent.

Certainly, it is necessary to take account of these last eventualities, to always bear them in mind when we prescribe iodide, and arm ourselves against them by certain precautions which I shall shortly mention. But, on the whole, it behooves us only to take them for what they are, and it would be madness to definitely renounce the enormous benefits of iodide for fear of the exceptional dangers to which it may be liable.

The reason of these accidents due to iodide is not known, and has hitherto baffled all investigations. The little we know is as follows:

1. It was said at first that the accidents were due to impure iodide containing iodates. In fact, it appears that commercial iodide is not always noted for its purity. An eminent chemist whom I once treated told me that when I prescribed iodide for him he made it himself, or at any rate purified what he got from the druggists.

It is therefore possible that some of the accidents of iodide are due to faults in manufacture, and especially to the toxic iodates which it may contain. But this is certainly not the reason of all the accidents, for I have more than once had the mixtures which had caused these effects analyzed by competent chemists, who have never detected impurities or iodates. Another cause for these accidents must therefore be looked for.

2. The effects have been attributed to an antecedent affection of the kidneys, causing renal insufficiency. In fact, accidents of this kind have been found in relation to morbid conditions of the kidneys, as in a case reported by Morrow. Gaucher has also reported the case of a patient affected at the same time with cerebral syphilis and interstitial nephritis with albuminuria, in whom iodide of potassium provoked an abundant bronchial hæmorrhage, which caused fatal asphyxia by accumulation of blood in the respiratory passages.

But this is surely not the explanation of the phenomena of iodic intoxication, for these phenomena usually occur in subjects who are in good health, in whom the kidneys and viscera are unaffected.

3. Is it possible that the effects of iodism are due to an accumulation of the drug produced after a time, or to too large doses administered from the first? The arguments against this view are, first, that the accidents are most commonly produced a few hours after ingestion of the first doses; sometimes after the first dose, as in the case related by Ricord. Secondly, they are generally produced by moderate or even small doses.

This last point is curious, and merits special mention. There are hundreds of observations which show that small doses of iodide are sufficient to determine severe phenomena of intoxication. One often sees attacks of coryza, swelling of the eyelids, violent headache, and sometimes iodic grippe, or even more severe symptoms, in patients who have only taken from seven to fifteen grains of iodide.

It would be an exaggeration to say, as was formerly said, that large doses do not produce the accidents which are caused by small doses, and that iodide "should be given by tons rather than by grains"; also, that the lower the dose the greater the harmful effect. But what we can say is, that very small doses are sufficient to cause all the accidents which we have described, and that the most severe accidents of iodism have often followed very small doses of iodide. For example, in a case of Nélaton's, glottic œdema followed a daily dose of fifteen grains; in a case of Weist's the same accident was caused by seven

grains; in a case of Guillemet's the same effect followed a single dose of about three grains.

In three cases where tracheotomy was required, the doses were: about seven grains in Ricord's case, thirty grains in Fenwick's case, and four to fifteen grains in Huchard's case. Again, bullous eruptions have been seen to follow doses of five or even one and one-half grains. Lastly, a dose of four and one-half grains in a child of five months caused severe purpura, followed by death in forty-eight hours (Mackenzie).

Therefore it is neither progressive accumulation of the drug nor excessive initial doses which cause iodic intoxication.

In an interesting work on the accidents of iodism Tissier comes to the same conclusion, and remarks: "It is not the prolonged use nor the high doses of iodide which provoke the laryngeal accidents of iodism. On the contrary, these accidents are early symptoms of intoxication, sometimes appearing during the first days, or even during the first hours, and after the administration of relatively small doses." The following table, taken from Groenouw, shows this very well:

APPEARANCE OF GLOTTIC ŒDEMA

Fournier....	1st	day with dose of	3	grains of iodide.	
Groenouw...	1st	" "	7	"	"
Fournier....	1st	" "	7	"	"
Fournier....	1st	" "	15	"	"
Foerster....	2nd	" "	30	"	"
Malakouski.	2nd	" "	30	"	"
Fenwick....	2nd	" "	54	"	"
Groenouw...	6th	" "	195	"	"

Dr. Briquet, in his interesting monograph, on "Iodide Treatment," expresses the contrary opinion, and says: "The common idea that small doses of iodide are more harmful than medium or large doses must be abandoned. On the contrary, it is certain that the stronger the dose the more is the subject exposed to iodism, and the more is it to be feared that this iodism may be serious." He cannot deny that severe iodism has more frequently followed small than large doses, but he explains this as follows: that it is rare when the administration

of iodide is commenced in large doses, and that the accidents of iodism being produced rapidly, the medication is suspended on the first warning. But these accidents do not occur less often when medium or large doses are given from the first, and are even more frequent and more intense.

4. The matter therefore requires further investigation, and all we can say is that the cause of these accidents is of a personal nature, peculiar to certain subjects. In fact, the idiosyncratic nature of these accidents is shown by various considerations. First, they only occur in a certain number of patients who are submitted to iodide; secondly, persons who are susceptible to iodide remain so permanently, and the toxic effects are repeated with each administration of the iodide; thirdly, every subject affected by iodide in a certain way will always be affected by the remedy in the same way.

There are, however, exceptions to this rule. Thus, I have seen some of my patients, after having been incapable of tolerating iodide at a certain period of their lives, take it some years later without inconvenience. The inverse is also observed. Certain subjects, having taken iodide without inconvenience, cannot tolerate it later on. These peculiarities are inexplicable.

For example, if a certain subject is affected by purpura during his first treatment by iodide, this will occur also during the other administration. Another, in whom iodide had caused a bullous eruption, will be always affected with the same bullous eruption at each new administration. One of my patients, after a small dose of iodide, showed the curious phenomenon of œdamatous turgescence of the upper lip, without any other symptom. Pellizzari has seen the administration of iodide cause a febrile eruption so strange in appearance that he was on the point of regarding it as farcy; but five times afterwards the same remedy caused identical symptoms in this subject.

Each individual thus manifests in his own way the toxic effects of iodide, and this seems to show that iodide accidents are due to individual peculiarity. But it is impossible to define this peculiarity. Besides, this mysterious peculiarity is not confined to iodide; it is analogous to the many and varied idiosyncrasies which certain individuals show for certain reme-

dies or articles of diet, which, although they remain unexplained, are none the less authentic.

As a means of preventing or counteracting the accidents of iodide, it has been proposed either to give it in a large quantity of milk, or to administer with it certain remedies considered to have a neutralizing power as antidotes to its toxic effects—namely, bromide of potassium, belladonna, bicarbonate of soda, chlorate of soda, morphine, salol, sulphanilate of soda, menthol, etc.; or to submit patients to a diet in which the chlorides are diminished. Experience has not confirmed the few results reported in favor of these methods. What appears to be better established, after the observations of Aubert, is the action of belladonna on the naso-pharyngeal accidents of iodide. According to this observer, belladonna attenuates or even abolishes the naso-pharyngeal intolerance which certain patients present in a high degree to iodide. Patients who could not tolerate iodide on account of accidents of this kind have tolerated it when given at the same time one grain of extract of belladonna daily, and in one case the belladonna was suspended, while continuing the iodide, without intolerance for the latter (*Lyon Médicale,* 1883).

But there are certain objections to the addition of a toxic remedy such as belladonna, which is uncertain in its effects and unequally tolerated.

It has also been said that when a dose of iodide causes accidents it should be doubled or trebled, after which it will be tolerated. But what physician would take the responsibility of such a proceeding when the action of iodide is shown by grave phenomena, such as œdema of the glottis?

Methods of the Administration of Iodide

Iodide of potassium has been administered in three ways—by the mouth, by enemata, and by subcutaneous injections.

The method of subcutaneous injections can only be regarded as an exceptional method, to be used under certain rare and peculiar indications. It is so simple to give iodide by the mouth, and the remedy is generally so well tolerated by the

stomach, that it would be absurd to administer it by the inconvenient and painful method of subcutaneous injections. Besides being often painful, injections of iodide may cause sloughing,[1] and require to be given many times to attain the usual efficacious dose. I only know of a single order of case where this method is indicated—namely, cases of cerebral syphilis, with loss of consciousness and relaxation of the sphincters.[2] It is then impossible to give iodide by the mouth (except by the stomach-tube) or by the rectum. The hypodermic route only remains, and must be used in default of the others.

In the same way the method by enemata, although much more practiced, should be reserved for special cases of gastric intolerance. There are few patients who cannot absolutely tolerate iodide by the stomach.

When we have recourse to this proceeding the intestine must be first evacuated by a simple enema, then the iodide enema is administered according to the following formula: thirty to sixty grains of iodide dissolved in six or eight ounces of water. Tolerance is facilitated by the addition of a few drops of laudanum.

But, apart from any special indication, it is the gastric method to which preference should be given: ninety-nine times out of one hundred iodide may be administered in this way.

1. It is found by experience that iodide is much better tolerated by the stomach when it is given in a diluted form. We may therefore exclude the method of administration by pills, capsules, cachets, tabloids, etc. On the one hand, as it is necessary to take a great number of these pills to absorb the required dose, this proceeding is neither convenient nor to be recommended to patients in reduced circumstances. On the

[1] *Vide* Gilles de la Tourette, "On Subcutaneous Injections of Iodide of Potassium" (*Progrès Médicale*, 1883); and E. Besnier (*ibid.*). The latter remarks: "In a case of intolerance for iodide of potassium in a patient in whom 7 grains of this remedy taken by the stomach produced an extremely pruriginous urticaria, I have injected the same dose of this drug in the center of the syphilitic gummata without causing the same phenomenon. There is thus a new method open to therapeutics and experimentation which is interesting from the practical point of view."

[2] Gilles de la Tourette and myself were reduced to treatment of this kind in a patient who was affected with severe cerebral syphilis (to which he rapidly succumbed), and could neither swallow nor retain enemata.

other hand, it often causes irritation of the stomach, owing to direct contact of the pure iodide with the mucous membrane.

The simplest and best way consists in giving iodide in solution or in syrup, and this is the method which is almost universally adopted. It is useful to employ solutions or syrups of the strength of fifteen grains to a tablespoon. This makes it easy to reckon the dose to prescribe, and also the dose which the patient says he can tolerate.

This solution should never be given pure, as it may irritate the stomach. It should be diluted with water, or to mask the taste the water may be replaced by anything the patient prefers, such as peppermint or various syrups, aniseed, milk with orange-flower water, or beer. Many of my patients prefer beer to anything else as a vehicle for iodide. In the same way, if iodide is prescribed in the form of syrup, each tablespoonful should be taken in half a glass of water. An agreeable syrup should be chosen for this purpose, one of the best being syrup of bitter oranges. Any agent which diminishes the disgust which certain patients have for iodide, or which favors gastric tolerance, is beneficial. I have often been obliged to vary the formula many times before finding the most agreeable preparation, especially when dealing with nervous women who regard all drugs as detestable and nauseous. The best plan in such cases is to give the iodide in wine of Alicante or quinine wine, syrup of coffee, or syrup flavored with curaçoa or aniseed.

2. Whatever the dose of iodide administered, it is always an advantage to divide it into several doses, to be taken two or three times a day.

3. Iodide should be given *after,* or, if necessary, *during* meals. When taken several hours after meals on an empty stomach it causes irritation, and often provokes intolerance. It is much better tolerated when taken before and immediately after meals. If it still causes gastric irritation, it is best to recommend the patient to take the daily ration of iodide in the water which he takes during meals, or to dilute his wine with the mixture. The remedy is thus taken in small doses mixed with the food, and has a better chance of being tolerated than in any other way.

Dosage of Iodide

There is much less agreement on this point than in the case of mercury. Some advocate small doses and others large ones. It is obvious that there are no fixed or absolute doses for iodide any more than for any other remedy. It is manifest that the efficacious dose is subject to great variations, according to the conditions of age, sex, constitution, individual tolerance, and especially the pathological situation. For example, the treatment of quiescent syphilis requires a much smaller dose than a case of cerebral syphilis with severe lesions, which may threaten immediate danger to life.

But, apart from these reservations, is there for iodide, as for mercury, what we have called an average efficacious dose? According to my personal experience, this dose, both from the curative and preventive points of view, may be estimated as follows:

1. For an adult man of good constitution and average strength, forty-five grains a day.

2. For an adult woman in the same conditions, thirty grains.

I consider doses smaller than these to be insufficient, if not always, at least in the great majority of cases, and that the daily doses of four to fifteen grains which are prescribed by some physicians are quite incapable of producing the therapeutic action which is expected from iodide. I could mention hundreds of cases in which such doses failed to act on specific lesions which were cured by larger doses; and if I refrain from quoting cases, it is because this fact is common knowledge and incontestable.

With regard to doses larger than the approximate average which I have just fixed, they are often useful, and even indicated by certain eventualities which I shall shortly define, but they are useless in the majority of cases. The height of therapeutic activity may certainly vary from thirty to sixty grains of iodide as a daily dose.

Large or intensive doses constitute another kind of medication. In this iodide is commenced with doses of seventy to

ninety grains, and rapidly increased to one hundred and fifty to one hundred and eighty. Sometimes the indications have appeared urgent enough to necessitate doses of one hundred and fifty grains from the first. There is no doubt that by these doses more intense effects are obtained than by average doses.

Thus, while useless and excessive in ordinary cases, and when iodide is only prescribed as a preventive measure, these intense doses are indicated in grave eventualities, when it is necessary to avoid imminent danger, or when an energetic action is required against old and obstinate manifestations. For example, these doses may be prescribed for gumma of the palate on the verge of perforation, in syphilis of the brain or spinal cord, in severe phagedenic ulcerations, or in chronic refractory lesions, etc.

But is there any necessity to go further in this direction at the risk of becoming involved in a therapeutic measure which knows no limits? Of late years veritable debauches of iodide have been made by prescribing it in daily doses of three hundred up to six hundred grains, or even more. But what is the use of such intemperance?

I can understand why such doses were formerly prescribed, and I have myself seen one of the physicians at the Midi Hospital prescribe seventy grammes (one thousand and fifty grains) of iodide daily, because this was the period of research and experimentation, and the results of such doses were then unknown. But to-day these excesses have neither the same object nor the same excuse. To-day, experience is established, and we know beyond a doubt that these extreme doses exceed absolutely those in which the remedy is efficacious—doses which produce all the effect that can be produced. As it does not require six bottles of seidlitz water to purge a patient, so it is superfluous to prescribe six hundred grains of iodide to produce an effect that seventy or ninety grains are sufficient to realize. Therefore, I repeat, what is the use of these monstrous, colossal doses, which are nothing less than fantastic? Is it not pure fancy to triple, quadruple, and decuple the dose of a remedy when there is no precise observation to show any difference in therapeutic action between one or other of these

excessive doses? Has any difference in action been shown between twenty or thirty grammes of iodide, or between forty and fifty? Not that I know of, at any rate.

It has been stated that in certain cases it is only possible to obtain curative effects from iodide except in doses of twenty or thirty grammes a day, smaller doses being insufficient. But if these facts are authentic, they certainly only form rare exceptions or idiosyncrasies. It has also been stated that iodide of potassium is essentially a capricious remedy, the effects of which are in no way proportional to the dose. Thus, sometimes it produces in very small doses physiological or even curative effects which are extraordinary. Why, then, by an inverse idiosyncrasy, should it not act on certain subjects in excessive doses only? Therefore it is urged that doses of twenty or thirty grammes a day should not be banished from therapeutics.

All this is true, and nothing is impossible in the way of idiosyncrasies. But it is necessary to recognize that this only concerns idiosyncrasies—that is to say, exceptions. I repeat that it is, and will always be, a most rare exception to require twenty to thirty grammes of iodide a day to obtain a curative effect from this remedy.

I may also add that this question of intensive doses, whether of iodide or mercury, in the treatment of syphilis, is far from being definitely decided. It requires further investigation, especially as it concerns another subject of major importance, that of the so-called *parasyphilitic* affections. In fact, according to certain physicians, the parasyphilitic affections, which are refractory to the usual treatment of syphilis, are only so on account of the insufficiency of the doses employed to counteract them. In intensive and chronically intensive doses they are said to come within the boundary of ordinary syphilitic affections. But this is a special subject which we cannot discuss here, and I only mention it by the way (*vide* Maurice Laurent, "On the Use of High Doses of Iodide of Potassium in Certain Cases of Syphilis," Thèse de Paris, 1900).

It is said that there is no danger in these large doses, and that they are well tolerated by the stomach and by the organism, etc. But it is no less true that the doses in question are often

badly tolerated by the stomach, causing nausea, dyspepsia, nervous depression, etc. In any case, it is useless to continue the discussion, for there is another reason which is of itself sufficient to condemn these excessive doses—namely, that they are useless. For, in the name of experience, it can be stated that if a dose of ten grammes of iodide fails in effect, so will a larger dose. This I can affirm both by my own experience and by the evidence of my colleagues. Many times, in rebellious and refractory cases, I myself have tried massive doses, in the hope of obtaining better results. On many occasions, when ten grammes of iodide failed, I have prescribed twelve, fifteen, eighteen, or twenty grammes, but have obtained no better effect. I have therefore renounced these extravagant doses, and never exceed the sufficiently intensive dose of ten grammes, being convinced that there is nothing to be gained thereby.

Directions for Iodide Treatment

Two questions present themselves for discussion:

1. The first and more difficult one is the following: With what dose should treatment be commenced in a patient whose tolerance for iodide is unknown? One would think, on *a priori* grounds, that tolerance to iodide should be obtained by gradually increasing doses, and that it would therefore be necessary to commence treatment by small doses which were afterwards progressively increased. But this rational proceeding is condemned by experience, for, as we have previously seen, it is often the small doses which are followed by severe signs of intoxication. In fact, *small doses appear to be particularly harmful.* I do not say that they are peculiar in this respect, but that they are more so than others. Personally, I think it more prudent, in view of avoiding the possibilities of iodism, to commence treatment by average doses than by small doses of four, eight, or ten grains. I believe that the fact of having hitherto escaped any severe accidents of iodism in my practice is due to the avoidance of small doses.

As an initial dose, it is my custom to prescribe for an adult

man thirty grains daily; for a woman, fifteen to twenty grains. I never give less than thirty grains as the initial dose for a man, and generally proceed as follows: fifteen grains in the evening of the first day; thirty grains on the second day; a few days later from thirty to forty-five grains (except in the case of much coryza). Moreover, I take a precaution, the value of which I cannot yet estimate, but which I mention because up to the present it has apparently succeeded. Before commencing the iodide treatment, I test the susceptibility of the patient to iodide by prescribing for a certain time Gibert's syrup, an iodio-mercurial preparation which produces some of the effects of iodide, but which, as a rule, does not cause severe phenomena of intoxication. If the patient is affected by this syrup, I am cautious, but in the contrary case I have a certain guarantee to proceed more boldly.

2. The second question is: In what doses should treatment be continued?

When tolerance is once assured, we have a free hand, the danger of severe accidents of sudden onset is gone, and we are at liberty to raise the doses in proportion to the indications. But this increase in doses during the course of treatment by iodide seems to me obligatory. I have often observed that the curative action of iodide rapidly decreases. The system seems to get used to the iodide, and only experiences an influence which diminishes with the duration of treatment. To maintain the action of the remedy at the same level, the doses must be progressively increased. I think that uniform treatment continued with the same dose is much less active than treatment by increasing doses. For instance, treatment commenced by a dose of thirty grains as the daily dose should be raised in a few days to forty-five grains, and later on to sixty grains, or even more if necessary. On this point I am in accord with the majority of my colleagues. Thus, for example, for a month's course of iodide I generally prescribe a dose of thirty grains for the first week, forty-five for the next fortnight, and sixty grains for the last few days of the month.

Can Iodide replace Mercury?

Mercury and iodide are the two weapons with which we arm ourselves against syphilis. We have already studied these weapons, and know their action and power, their management, advantages, and objections. We must now learn how to use them.

In the first place, is it a matter of indifference which of these two remedies we choose, according to the likes or dislikes of patients? Certainly not, because mercury is sufficient for the treatment of syphilis—that is to say, for the cure of actual lesions and as a safeguard for the future. This is known by common experience. Our ancestors had no iodide, but nevertheless they cured syphilis. They cured it more painfully than we do, and more rapidly in its tertiary stage. Examples may be found nowadays proving the same fact; for it is not uncommon, for one reason or another, for patients to be treated by mercury only, and nevertheless they are cured. I could mention a score at least of my patients who could not tolerate iodide, and who were treated successfully with mercury alone. Hence we must conclude that *iodide is not indispensable in the treatment of syphilis.*

But there is another question: Can mercury be replaced by iodide in the treatment of syphilis?—that is to say, is iodide alone sufficient in the treatment of the disease? This opinion was held at the time when the marvelous effects of iodide began to be known; but to-day the question is decided in the contrary sense. Personally, after having formerly tried exclusive treatment by iodide, I am convinced that this is bad treatment, and dangerous in several ways. There are three reasons for this: (1) Because it has very little action, and sometimes none at all, on secondary lesions; (2) because it allows these secondary lesions to persist for a long time, and thus constitutes a social danger, owing to the contagiousness of these lesions; (3) because it does not constitute a safeguard for the future by removing the tendency to tertiarism.

1. With regard to the first reason, nearly everyone is in

agreement. It is the general opinion that iodide, which is so active against tertiary lesions, has only a slight action on secondary phenomena. If iodide is administered during the primary or secondary stages, the secondary eruptions are produced and reproduced almost as if no treatment had been given. I have often seen, in patients treated in this way, cutaneous syphilides, mucous patches, alopecia, iritis, adenopathy, nervous symptoms, etc., appear and reappear, sometimes in a subinvolutive manner. So that some of my patients, who had at first refused any treatment but iodide, were forced against their will to ask for something else, even mercury, to relieve them of their symptoms; and, in fact, I only succeeded in relieving them by mercury. Moreover, certain secondary lesions, of the kind which only disappear of their own accord very slowly, are absolutely refractory to iodide. This is shown in the two following cases:

In one of my patients large doses of iodide had no action after sixteen months on a palmar syphilide and some papulosquamous syphilides on the body, while mercury caused them to disappear in a few weeks. In another patient a similar lesion persisted without change for seventeen months, in spite of large doses of iodide, and was only influenced by local mercurial inunction.

2. My second reason is a corollary of the first, but has a special importance. Iodide, having only a very slight action on the secondary stage, does not prevent secondary manifestations from persisting or from being reproduced. But these manifestations are precisely those which are most contagious—those which serve as the most common origin of the transmission of syphilis, the most frequent source of contaminations—namely, the mucous syphilides, or mucous patches.

Therefore, the first duty of the physician and hygienist is to condemn a method of treatment which results in such consequences. It is for this reason that exclusive treatment by iodide constitutes a veritable social danger in not suppressing the multiplication of lesions which are most likely to propagate syphilis.

3. Lastly, I condemn this treatment because it does not exert

on the disease a sufficiently intense or profound action to dry up the source of specific lesions, and because it does not constitute in the same degree as mercury what may be called a preventive treatment.

I hold it as proven that, when administered alone without mercury, iodide often leaves the way open to the effects of tertiarism. I have often seen patients treated in this way end with tertiary symptoms, and this in certainly a larger proportion than is usually observed after mercurial treatment. I find in my notes that out of twelve patients treated exclusively by iodide, seven have already been affected with tertiary lesions of a particularly severe nature—namely, tertiary syphilides in two cases, phagedenic syphilide in one case, cerebral syphilis in three cases, and spinal syphilis in one case.

Therefore, for these three reasons exclusive treatment by iodide appears to me to be condemned by experience.

Iodide in the Secondary Period

However, we have something better to do than discuss the question whether we can dispense with the services of mercury or iodide—that is, to find out what we can expect from both of them in the interests of our patients, and try to benefit from the effects proper to each of them.

From this point of view, experience has demonstrated beyond question that mercury is more suitable for the treatment of secondary symptoms, and iodide for that of tertiary lesions. In other words, it is the custom to regard mercury as the specific for the secondary period, and iodide as the specific for the tertiary period. Thousands of observations have shown, and still show every day, that mercury exerts an intense curative action on the manifestations of the disease during the first two or three years, and that iodide has a still more active and more rapid action on lesions which occur in the late stages of the diathesis.

No one would dream of reversing their positions by treating secondary syphilis with iodide and tertiary syphilis with mercury. In the case of a roseola, papular syphilide, or mucous

patch, a hundred physicians out of a hundred will prescribe mercury; and in the case of a palatine gumma on the point of perforation, a hundred physicians out of a hundred will treat it with iodide. To treat this gumma with mercury would be a gross error, and would give it time to perforate the palate.

But is this appropriation of each of these two remedies by a special category of lesions exclusive and absolute? Has mercury no action except on secondary lesions, and iodide none except on tertiary lesions? Certainly not. Let us beware of this dichotomy which would divide syphilis into two parts, one of which is suitable for mercury and the other for iodide. That such a doctrine rests on a foundation of truth, on an assemblage of incontestable therapeutic results, we have just pointed out; but let us hasten to add that here, as elsewhere, the rule is subject to exceptions. But these exceptions are both numerous and of major importance. Let us define them in detail.

Iodide certainly has only a mediocre action on secondary lesions, especially the eruptions of this period; but, by a singular and inexplicable contrast, it exerts a most marked influence on certain manifestations of this stage. For example:

1. *Secondary headache* is rapidly relieved by iodide, and in cases of nocturnal headache in the secondary stage a small dose of iodide should be always added to the mercury. A dose of fifteen grains daily is sufficient in such cases, but in tertiary headache much larger doses are required.

2. *Neuralgic pains,* with vague localization, which are especially common in women during the early months of the disease.

3. *Periostitis, ostealgia, arthralgia, myosalgia,* etc.

4. *Early malignant syphilis,* which is characterized by gummatous infiltration and ulceration. The explanation of the beneficial effect of iodide in this case is due to the fact that early malignant syphilis is only tertiary syphilis which has succeeded the chancre without a secondary period.

5. In all cases where there is a contra-indication to mercurial treatment, such as idiosyncrasy, debility, cachexia, tubercle, etc.

Mercury in the Tertiary Period

Reciprocally—and this is much more important—mercury occupies an important place in the therapeutics of teritary syphilis. It may be said of mercury that it is an *antisyphilitic at every period of the diathesis.* In fact, mercury figures under three titles in the treatment of the tertiary period: as an auxiliary agent in many cases, as the principal agent in a few cases, and especially as a preventive agent.

1. Mercury is very often useful in this period as an auxiliary agent, and adds its influence to that of iodide. This combination of the two therapeutic forces is often useful in certain states of the diathesis. This association of the two antisyphilitics, mercury and iodide, constitutes what is called the *mixed treatment,* of which we shall speak shortly.

2. Sometimes, but less frequently, mercury takes the place of the principal curative agent in the tertiary period. In fact, iodide sometimes has its failures, and it is in such failures that mercury is of assistance. In other words, there are cases in which iodide is powerless without the assistance of mercury.

To cite only one example, sarcocele, which is cured by iodide in the great majority of cases, sometimes resists it, and is only cured by mercury. Gosselin and Reclus have reported several cases of sarcocele on which iodide, even in large doses, had only an incomplete action, and in which mercury only was successful. I could also mention several examples of the same kind.

3. But it is especially as a *preventive* agent that mercury is most useful in the tertiary stage. It is *par excellence* the fundamental remedy for syphilis, and is much more to be depended on than iodide to prevent recurrences and safeguard the future.

Iodide is certainly the immediate remedy for tertiary lesions, which it resolves in a wonderful way. But if it constitutes a marvelous "eraser" of lesions, it is not in the same degree a "curer" of syphilis. It lets it return, and allows other lesions to be produced after those which it has cured. Recurrences of this kind are not seen so often after mercurial treatment in the course of the tertiary period.

I do not say that mercury always prevents recurrences, for I have learnt by experience that recurrences may be produced in spite of any kind of treatment. But I affirm that they are produced much more rarely after mercurial than after iodide treatment. *As a preventive medication, there is much more confidence to be placed in mercury than in iodide.* Mercury approaches much nearer than iodide to an ideal remedy, serving as an antidote for the syphilitic poison. It neutralizes this poison more efficaciously and completely; it exerts a more profound and lasting action on the disease than iodide; it *cures* better, in the precise meaning of the word, and safeguards the future more surely. If one of these two remedies were to disappear, I should console myself more easily with the loss of iodide than of mercury.

The practical application of what I have just said is that *the cure of a tertiary lesion should always be followed by mercurial treatment,* with a view to prevent recurrences and to safeguard the future. If a patient has just been treated and cured of a tertiary manifestation, he should undergo a series of intermittent mercurial treatments. By this means recurrences may be avoided, while if the treatment is limited to iodide, after the lesion is cured the patient will be exposed to the chance of further effects of the disease.

This is the result which I have arrived at after a great number of observations on the causes of tertiarism.

Before concluding the iodide treatment, I may mention that several other remedies have been proposed as substitutes for iodide of potassium:

1. *Iodides of Sodium and Ammonium.*—According to some authors, iodide of sodium is better tolerated than iodide of potassium, less irritant to the throat and stomach, less depressing, less subject to cause eruptions, etc.; but it is, on the other hand, considered to be less active. Iodide of ammonium has been stated by Gamberini to be superior or preferable to the other iodides. It is said to have an equivalent action in smaller doses, and to be more rapid. It is also said to cause fewer accidents of iodism. Hutchinson has united the three iodides in the same preparation, and claims good results.

For several months I have systematically substituted iodide of sodium for iodide of potassium in hospital practice, and discontinued it because I found no advantage. Iodide of sodium certainly appeared to have a remarkable antisyphilitic action, and was better tolerated by some patients than iodide of potassium; but it certainly had not the same energetic action. There is nothing to be gained by its use except in the few cases which are refractory to iodide of potassium.

2. *Iodide of Rubidium* is said to be the best substitute for iodide of potassium from the point of view of tolerance and of therapeutic action. But it is not used on account of its difficult preparation and high price.

3. *Iodine.*—This may produce good results, but is very inferior to iodide of potassium as an antisyphilitic remedy. It is indicated when the latter remedy cannot be tolerated, and, according to Guillemin, a dose sufficient to influence syphilitic lesions or symptoms does not cause the slightest accident. The solution proposed by Guillemin consists in five grammes of tincture of iodine (ten per cent.) in one thousand grammes of distilled water. Two or three tablespoonfuls morning and evening before meals (*Gazette Hebd. de Méd. et de Chir.*, 1865).

4. *Iodoform.*—Although this constitutes an excellent local application, it does not appear suitable as an internal remedy. It is seldom tolerated, and is liable to cause toxic symptoms.

5. *Iodol, Iodalbacid, Iodipin, Iodalose, Benzo-iohydrine,* etc.—All these remedies, and others which I need not mention, are much inferior to iodide of potassium in antisyphilitic action. Therefore this last agent in the present state of our knowledge remains the best method of iodide treatment, and it is the only agent which should be used in severe or urgent cases. I have more than once seen the so-called substitutes for this remedy lead to regrettable accidents, which were very probably caused by the drug.

CHAPTER XXI

MIXED TREATMENT

A FINAL point remains for consideration — the question whether mercury and iodide are antagonistic or incompatible. The combination of mercury and iodide has been compared to the union of fire and water, and since iodide is an eliminator of mercury, what is the use of uniting two remedies of which one excludes the other? But this idea is only theoretical, and is not in accordance with observation.

Far from being antagonistic, these two remedies agree very well together and mutually reinforce each other. It has been clinically established that certain manifestations of the disease react better to the combined influence of mercury and iodide than to either of these remedies separately. This combination, which is called the *mixed treatment,* constitutes a most efficacious mode of treatment in many cases, and is in some indispensable.

I shall specify these cases individually when I come to the mode of treatment which applies to each of the groups of syphilitic lesions, but I will mention here a few examples. The prototype of the lesions in which the mixed treatment is indicated is the dry tubercular syphilide. Neither mercury nor iodide have the same rapid and intense action on this syphilide as the mixed treatment. This treatment may also be prescribed with advantage in the numerous unclassified lesions which occupy the border land between the secondary and tertiary periods—namely, iritis, choroiditis, sarcocele, perionyxis, ulcero-crustaceous syphilides, periositis, etc. In cases threatening the life of an organ or of the individual mixed treatment is not open to question, and is a necessity. In the case of cerebral syphilis, for example, all the resources of therapeutics must be made use of.

There are two methods of mixed treatment—one by administering both drugs in the same pharmaceutical preparation, the other by administering them separately.

The first method is effected by various preparations known under the names of Gibert's syrup, Boutigny's syrup, Ricord's solution of biniodide and iodide,[1] Gibert's pills,[2] etc.

The most commonly used preparation is Gibert's syrup, also called syrup of biniodide with iodide:

Biniodide of mercury. . .	20 centigrammes.	$\frac{1}{3}$ gr.
Iodide of potassium. . . .	10 grammes.	10 gr.
Syrup.	500 "	ʒi.

A tablespoonful of this syrup contains eight milligrammes of biniodide (one-eighth grain) and forty centigrammes (six grains) of iodide of potassium.

This syrup is in common use in France, but has many objections. The taste is objectionable, especially to women. It is also badly tolerated in many cases. Thirdly, it is a preparation of only mediocre activity in doses which are tolerated by the stomach—viz., two or three tablespoonfuls daily. It contains less than seven grains of iodide to the tablespoonful, so that, in prescribing two or three tablespoonfuls of syrup daily, the dose of iodide is only fifteen to twenty grains of iodide, which is obviously too small in serious cases. Hence it is better to increase the iodide according to the following formula:

Biniodide of mercury. . .	20 centigrammes. . . .	$\frac{1}{3}$ gr.
Iodide of potassium. . . .	20 to 25 grammes. . . .	20 to 25 gr.
Syrup.	500 grammes.	ʒi.

On the whole, the preparations containing mercury and iodide can only be regarded as therapeutic agents of medium

[1] Biniodide of mercury. . . . . 15 centigrammes.
Iodide of potassium. . . . . 15 grammes.
Distilled water. . . . . 500 grammes.

[2] Biniodide of mercury. . . . . 10 centigrammes.
Iodide of potassium. . . . . 5 grammes.
Gum arabic. . . . . 50 centigrammes.
Honey. . . . . q.s.
For twenty pills. Two pills are equivalent to 25 grammes of Gibert's syrup.

intensity. In the doses which are tolerated they are less useful than mixed treatment carried out in another manner.

For example, the too famous syrup of Gibert, which no doubt owes its popularity to the fact that it avoids the use of a formula, is only a feeble antisyphilitic. It may suffice for the cure of mild cases, but it is unsuitable for severe or grave lesions.

The method of administering iodide and mercury separately is much more convenient in practice and much more active. In this method iodide is given in solution or in syrup, and mercury is administered in the form which appears to conform best with the indications of the case to be treated—either by ingestion, inunction, or injection. Thus there are three possible combinations:

1. *Iodide with Ingestion of Mercury.*—For example, two or three of Dupuytren's pills are prescribed with forty-five to sixty grains of iodide daily. In this case the remedies may be taken simultaneously, one pill and one tablespoonful of iodide mixture before each meal, or, alternately, the pills before breakfast and dinner and the iodide at noon and at bedtime, according to the tolerance of the stomach.

2. *Iodide with Mercurial Inunction.*—This is an excellent method, which has the advantage of sparing the stomach. In some cases it is the only one available. The iodide is given before meals and the inunction at bedtime. This method allows the most energetic and intensive treatment without disturbing the digestive organs and without causing intolerance. It is the most suitable form of treatment for severe cases, especially of visceral syphilis.

3. *Iodide with Injections.*—This method is also satisfactory and very powerful, and tends to become more and more frequently employed.

In conclusion, we may say that, of the two methods of mixed treatment, that in which mercury and iodide are administered separately is certainly preferable to that in which the two remedies are united in one pharmaceutical preparation; and this for two reasons:

(1) Because with the former we are at liberty to graduate

the doses of each of the remedies according to the indications and according to tolerance—in fact, to adapt both remedies to the exigencies of the particular case.

(2) Because with this method it is easy to raise the doses of mixed treatment to a level of intensity far higher than that which the other method allows. With Gibert's syrup we are soon stopped by doses of medium intensity; while with the other method, especially with inunctions or injections combined with iodide, we can carry out a much more energetic treatment which is capable of realizing the total therapeutic effects of both remedies.

CHAPTER XXII

SERUM TREATMENT

Before concluding the different methods of treatment for syphilis, I shall mention certain attempts at serum therapeutics.

From the fact that animals are so refractory to syphilis, it is natural to inquire whether this immunity can be made use of for the benefit of man. In all probability this mysterious immunity of animals is due to some material quality, chemical or otherwise, of their tissues. Would it not be possible to confer a similar immunity on man by inoculating some living part of the animal? Possibly this is a chimerical illusion, but an illusion so seductive, even so rational—at least, theoretically—that even after failures we are irresistibly attracted by it.

This idea, for which I certainly do not claim priority, I have recently attempted to apply in a practical form, and have experimented on several syphilitic patients with injection of animal serum from the dog and horse. These results are too few in number and too recent for any conclusion to be drawn from them, but they have produced some interesting results which are worthy of mention.

With regard to the question whether injections of animal serum are antisyphilitic, I refrain from giving a definite opinion. But that they are endowed with some action on syphilitic patients and indirectly on syphilis is, I think, indisputable. It is certain that, by some process of which I am ignorant, they have had up to the present a favorable action on several of my patients.

In the case of a woman with severe phagedena of the face, resulting from malignant syphilis of four years' duration, injections of serum, with simple dressings, led to cicatrization

of the lesion in less than a month, and at the same time caused a curious change in the general condition, improving the health and increasing the weight.

Another patient, who for three years had been subject to constant outbreaks of malignant syphilis, which had riddled his body with enormous ulcerations, was treated by injections of serum. At first the result was excellent, and all the ulcers rapidly healed; but a fresh outbreak of gummatous lesions occurred, which induced us to resume iodide of potassium. Under the influence of these injections and a small dose of iodide (a dose inferior to that which, even with the addition of mercury, had been necessary to act on the former attacks) resolution of the fresh lesions took place, and the patient is now cured.

Tommasoli (*Gaz. degli Ospitali,* 1892), who has experimented with lamb's serum and ox's blood, claims good results from this treatment. In eight cases he has seen severe syphilides disappear with greater rapidity than by any other treatment under the influence of injections of several c.c. of goat's blood. On the other hand, Kollmann (*Deut. Med. Woch.,* 1892), experimenting under the same conditions, obtained no result from this mode of treatment. I ought also to say that my later experiments have given less satisfactory results than the first. Nevertheless, I still believe that some benefit may be derived from the method.

It therefore appears that injections of serum are not without influence on patients, and exert a favorable action on their lesions. But the extent and nature of this action can only be established by further observations.

Another point results from experiments on subjects affected with lupus—viz., that injections of serum appear to have a tonic action on the organism. They increase the strength, mend constitutions which are debilitated, favor nutrition, and cause increase of flesh. In all our patients, both syphilitic and lupic, we have nearly always noticed an increase in weight, and it is possible, or even probable, that injections of serum act on syphilis indirectly by improving the general health and by modifying the soil. But this remains to be proved.

However, whether they act by a microbicidal or by a tonic action, the result is none the less beneficial for patients and useful as a therapeutic measure, especially as these injections always appear free from local accidents, and are, on the whole, well tolerated.

We may conclude that in a certain number of cases, mostly of a severe nature, these injections have appeared to exert a favorable influence on the general health of patients and on their specific lesions, and, consequently, that it is justifiable to subject them to new experiments to determine if they are really efficacious, and by what process they may influence syphilis.

However, according to Morel-Lavallée, these injections are not always inoffensive. In one case a giant urticaria appeared at the point of injection, which lasted twelve days, and left ecchymoses (*Bulletin de la Soc. Française de Derm. et de Syph.*, 1891).

From another point of view—that is to say, with the hope of attacking the syphilitic poison by an *antitoxin*—various serums have been tried—namely, blood serum from syphilitic subjects in the tertiary or even in the secondary stage; serum from heredo-syphilitic subjects; serum derived from the secretions or pathological liquids of syphilitic subjects; serum of animals inoculated with divers syphilitic products (Tarnowsky inoculated two foals, one ninety-seven, and the other one hundred times!).

Other attempts of the most varied nature have been made with the same object of attacking syphilis by an organic antidote. One of the most recent is proposed by Butte, and consists in injections of a decoction of lymphatic glands.

These numerous attempts have not up to the present arrived at any definite result; but a series of failures should not discourage the seekers and friends of progress. The methods of Pasteur have accomplished so many wonders that another one of the kind is not impossible; and if there exists a vaccine for syphilis, it is by these methods that this benefit to humanity will be obtained.

CHAPTER XXIII

GENERAL MANAGEMENT OF THE TREATMENT OF SYPHILIS

We have now studied the different therapeutic agents with which we are armed against syphilis, and their more particular application to the different stages of the disease and the different kinds of lesions. But this is only the least important part of our subject, for questions more serious, more difficult, and more controverted have now to be considered.

To be more explicit: how are these remedies at our disposal to be employed in a useful and sufficient manner? How should the treatment of syphilis as a whole be carried out? When should this treatment be commenced, and how long should it be continued?

At what Period should the Treatment of Syphilis be commenced?

This question, in my opinion, only admits of one answer—namely, *The treatment of syphilis should be commenced as soon as it has been definitely diagnosed.*

For *a priori* reasons, it would appear that the sooner treatment is commenced, the greater chance it will have to exert an attenuating and preventive influence on the diathesis; and this rational induction is confirmed by experience. I have many times confirmed the two following facts:

(1) *Syphilis treated from the commencement generally shows itself amenable to treatment, benign in actual symptoms, and relatively less severe as regards later manifestations.*

(2) *On the contrary, syphilis treated at a later period is generally more rebellious to therapeutic agents, more prolific in lesions and in relapses, and, on the whole, less curable and more dangerous.*

I repeat that with treatment inaugurated in the early stages of infection there is a chance of avoiding the majority, or nearly the whole, of the serious lesions of the disease; while if we are called upon to intervene later on, or if we intentionally postpone treatment, the disease is less amenable to therapeutic agents and more refractory. Treatment which attempts too late what should have been done earlier—"overtaking" treatment, as it may be called—only overcomes the acquired impetus of the disease with difficulty. It seems that the disease, when left to itself, spreads its roots more deeply into the economy, or, to speak in modern language, it disseminates its microbic colonies. It seems that, by intervening too late, we meet with strong opposition, as if we were attacking an enemy to whom we had given time to fortify his positions.

From my practical experience, I have no doubt on this point. With syphilis which is attacked *ab ovo,* we are successful nineteen times out of twenty; but we have to struggle for a long time with syphilis which by long expectation has been allowed to take a firm hold, or to become anchored, as it were, in the organism. In the first case, the chances of safeguarding the future are many; in the second, the risk of early or late recurrences is more to be feared. The old adage *Principiis obsta* is applicable here, and my advice is to *attack syphilis too soon rather than too late.*

Moreover, the question whether syphilis should be treated as soon as it is verified is only discussed in the case of one of its lesions—namely, the chancre. It never occurs to a physician to question whether treatment for a secondary or tertiary symptom should be commenced at once or deferred. In the case of a mucous patch or a gumma, no one hesitates to prescribe for the original morbid cause of these lesions. But with the chancre it is another matter: doubts arise, and different opinions are expressed. Some treat the chancre, like any other specific lesion, by prescribing immediate treatment, but others absolutely refuse to intervene and prefer to wait. Long and interminable discussions have taken place on the advantages and disadvantages of these two methods of practice.

This problem, if problem it is, should, in my opinion, be

posed as it presents itself in practice. In a given case of chancre, this chancre is either incontestably syphilitic, or a certain amount of doubt may exist as to the syphilitic nature of the lesion. The practical problem to be solved is the course to be taken by the physician in either of these alternatives.

1. If the chancre is certainly syphilitic—by its objective characters, by its induration, by its adenopathy, and, if necessary, by its period of incubation, its negative auto-inoculation, and its source of contagion—should antisyphilitic treatment be commenced immediately, or should it be postponed till the appearance of secondary symptoms?

This question has been much discussed. Some advocate immediate intervention, while others regard it as superfluous, because it does not prevent secondary lesions, nor even attenuate them. It has even been said that it is dangerous, on account of disturbing the alleged regular evolution of the lesions, and even liable to "determine the invasion of severe secondary phenomena such as periostitis, or even important tertiary symptoms."

A whole series of objections has been raised against what is called the early treatment of syphilis. The following are the principal ones:

(*a*) *It is not an abortive method, and it does not prevent secondary symptoms.* This is true, but the early treatment has no pretension to be an abortive method. It is considered to be better than others because it intervenes earlier. This objection can therefore be disregarded.

(*b*) *It is a disturbing method, which introduces irregularity into the normal evolution of syphilis.* This assumes that this so-called irregularity is really prejudicial to patients. But what is the "normal evolution" of syphilis? To assign to syphilis any particular evolution is to speak in the name of laws and pathological eventualities of which we have not the secret.

(*c*) *The treatment is dangerous because it leads to severe accidents in the future, especially destruction of organs and serious disorders of the nervous system.* This is an imprudent and hypothetical allegation which is contrary to good sense and

to clinical observation. Who could believe, for example, that a palatine gumma or cerebral syphilis could be the consequence of treatment commenced in advance by a few weeks? Who could believe that this gumma or cerebral syphilis would not have been produced if, instead of commencing treatment in the stage of the chancre, it had been begun three or four weeks later? This objection is of no importance, and is one of those which we have the right to ignore.

(*d*) *It is a treatment which weakens in advance the therapeutic effects of mercury, so that when lesions occur the best weapon to attack them with has been used up.* The reply to this is simple and formal. What weakens the power of mercury is not the fact of giving it too soon or too late, but the fact of giving it too long, in a continuous manner without intermissions.

On the whole, therefore, none of these objections appear to me of the slightest importance. Besides, in my opinion, the question does not merit the importance which has been attached to it. The dispute concerns simply a matter of a few weeks one way or the other in the commencement of mercurial treatment. Can much importance be attached to such a slight difference in the case of a chronic disease such as syphilis, especially when in practice this difference is diminished or even obliterated by the fact that most patients do not present themselves till some time after the origin of the chancre?

Between these two opinions good sense and experience speak definitely. In the first place, in the name of good sense, is it not evident that, if mercury constitutes the chief remedy for syphilis, there is every reason to employ it as soon as possible, and profit by its action from the first moment that the disease is verified? Is it not an advantage to attack the disease soon after its onset? Is it not more rational to try and prevent morbid symptoms than to wait for their appearance before treating them?

"It is evident that, from the moment when we are convinced that we have to deal with a true chancre, and are consequently unable to prevent general infection of the organism, there can be no sufficient reason to prevent us from taking action against

this infection. Nothing can explain the conduct of physicians who only commence specific treatment at the period when secondary symptoms have already appeared. It is difficult to understand why, when in the presence of a fire, one should first let the fire burn up, and only try to extinguish it when it has already attained a certain intensity" (Smirnoff).

Moreover, clinical experience has shown—

(1) That, in the absence of immediate treatment commenced at the period of the chancre, the first secondary symptoms may be intense and confluent.

(2) That with immediate treatment, on the contrary, the first symptoms are generally benign, superficial, and tolerable. It is beyond contention that immediate treatment results in *attenuating the secondary period* with regard to the number, intensity, and quality of the manifestations. It is certain that a secondary period which follows treatment commenced with the chancre has generally few symptoms, and these are nearly always benign. It is in these cases that one sees very discreet and manifestly aborted syphilides, consisting of a small number of eruptive elements—for instance, roseolas formed by a score of small disseminated spots, or papular syphilides consisting of a dozen papules, etc. Is this the kind of roseola or papular syphilide which is observed when the disease has been abandoned to its own evolution?

It is a rare but authentic fact that specific treatment commenced with the chancre, and continued methodically afterwards, may suppress the secondary period, so that it is not manifested by any lesion.

Lastly, from the practical point of view, is it not to render a service to patients and to conform with their wishes, to spare them by early treatment from certain distressing or compromising symptoms of the secondary period?

I can only repeat here what Ricord said long ago: "I confess that I cannot understand the advantages to be derived from the practice of waiting for the development of constitutional manifestations before administering mercury. If the diathesis exists from the appearance of the chancre, why not attack it at once? If it must certainly, and at an early date, reveal itself

by a series of more or less distressing and painful symptoms, why not attempt to put a check on these manifestations? Is it better to wait for a lesion to be produced than to prevent its development? I am curious to know if patients are satisfied with this expectation, and if they sincerely approve of this slowness when they begin to feel the nocturnal pain of syphilis, or see their skins covered with spots, their forehead encircled with the crown of Venus, or their scalp denuded of hair" ("Leçons sur le Chancre").

The question is thus decided—at any rate, in my opinion; for, after having heard a venerated teacher at the École du Midi, Cullerier, uphold the method which consists in postponing the administration of mercury till after the appearance of the roseola, I formerly practised this method very scrupulously, and by experience was obliged to renounce it. I therefore wish to spare others the apprenticeship which I went through, and will conclude with the advice to *commence the treatment of syphilis from the chancre;* for, in the words of Hutchinson, "it is impossible to commence it too soon."

It is necessary to add that this treatment should only be undertaken on the basis of a certain and irrefutable diagnosis; otherwise an error will be committed, as we shall see in discussing the second alternative.

2. If the chancre is of a doubtful nature—that is to say, if after a minute and careful examination a certain doubt remains as to the diagnosis—*it is better to wait and not prescribe mercury*—to wait for confirmation of the syphilitic nature of the chancre by the appearance or non-appearance of secondary symptoms, and to act accordingly.

This is the rule in practice—a rule which allows of no exception, and which the physician is bound to obey rigorously. For to institute a preventive treatment on the strength of a doubtful diagnosis is to compromise the interests of the patient and to inflict an injury upon him. I may illustrate this point by quoting from the pages of Ricord, who has explained the situation in a masterly manner:

"It is not, under these circumstances, a simple question of therapeutics; the highest interests are at stake. It is not a

matter of indifference for a man to know whether he has syphilis or not. A disease which grips for ever the body of its victim, a diathesis which pursues its victim all his life, and beyond it to posterity, a constitutional taint, transmissible and hereditary—these are not vain and frivolous considerations. Men of the world do not deceive themselves about the possible consequences of a chancre, and wish to be duly informed on this subject, both for their own sakes in the present and in the future, and for the sake of their relations and their future family. They demand from us an actual diagnosis, including an irrevocable prognosis for the future, based on the possible consequences of a chancre.

"If, therefore, you administer mercury for a doubtful primary lesion, you risk depriving yourself and your patient of an exact knowledge of his condition; you risk leaving him with a phantom, or of giving him false security.

"Mercury has the power of preventing or retarding the constitutional manifestations. But when specific medication is commenced from the first for a chancre of doubtful character, what will be the significance of the absence of all symptoms during the first months following this chancre? Is present immunity to be considered as evidence of complete immunity, absolute and definite, or simply as a temporary effect of treatment? Is it to be attributed to the nature of the primary lesion, or to the prophylactic intervention of the remedy? This cannot be decided, and several months or years may pass by without the diagnosis being any further advanced than on the first day.

"Suppose, on the contrary, that because of the uncertainty of the nature of the chancre it is simply left to Nature, and the disease abandoned to its own natural development, what will happen? If there is syphilis, this will be revealed by undoubted symptoms in the course of a few weeks, and henceforth the diagnosis is established. On the other hand, if nothing occurs within the first four months, there is a certain presumptive evidence of immunity; and if the fifth and sixth months pass by without symptoms, the diagnosis is made, and with it the prognosis is established. Non-infection is certain, and the

patient may be assured of absolute immunity both for the present and for the future." [1]

Following the practice of Ricord, I insist on the harm done to patients by the institution of treatment "at all hazards" prescribed for a chancre of doubtful nature. I insist on this point because nothing is more common than this detestable practice, as experience shows every day. I am constantly consulted by patients who explain the situation as follows: "I come for your advice, doctor, about a chancre which I have had for some time. It has never been certain what this chancre was; some called it soft, others indurated. But my own doctor prescribed mercury for the sake of prudence, and I have taken it for several months (two to six months or more in different cases). Nothing has happened—thanks, no doubt, to this treatment. But I now wish to know if I have really had syphilis, and if there is anything more for me to do."

Suppose, on examination of this patient, I find some lesion or evidence of syphilis: I have the right to an opinion, and can give him advice on the subject. But in the contrary case, what is the advice to be given him? Am I authorized to leave him without treatment? This is a peculiarly dangerous situation, for if the patient has had syphilis, he will not be cured by a treatment of a few months' duration, and not to renew treatment is to leave him uncured and liable to future accidents. On the other hand, if he has not had syphilis, what is the use of continuing to treat a disease which he has never had?

This embarrassing situation is due almost necessarily to the institution of *chance treatment,* not based on a primary diagnosis which is absolute and irrevocable.

And it is much worse if the patient who consults us in such circumstances asks whether he may marry. On what basis is a decision to be arrived at for or against the advisability of marriage? If he has had syphilis, a few months' treatment will not prevent his being a dangerous husband for his wife and future children. But if he has not had syphilis, why should he be condemned to be celibate? There is no outlet from this situation; it is a blind alley.

[1] Ricord, "Leçons sur le Chancre," edited by A. Fournier.

Such embarrassments, such situations, which are inextricable for the physician and prejudicial in all ways for the patient, frequently result from the pernicious, and yet very common, practice of prescribing mercury at all hazards for chancres of doubtful nature. The importance of taking precautions against a medical error of this kind, which may lead to such consequences, is obvious. There is only one means of avoiding such dangers, and a simple one—that is, to do nothing, and, above all, not to prescribe mercury. Revelatory expectation only in such cases can throw light on a primarily doubtful diagnosis.

In conclusion, therefore, I maintain that, in the case of a chancre of doubtful nature, we should have the courage to admit to our patient that we do not know what this chancre is; and, in order to know this as soon as possible, we should abstain from all treatment which may prevent evidence revelatory of the morbid evolution.

How long should Treatment be continued?—We have seen at what period the treatment of syphilis should be commenced; it now remains to consider how it should be continued. We will suppose that the treatment has been instituted for a chancre or for a secondary lesion, and that, after a course of two or three months, it has caused all the morbid phenomena to disappear. The patient may then think himself cured, but we know that he is not cured, and that our task is far from finished. Consequently the question arises, What is to be done now or in the near future?

All are agreed that further treatment is necessary, and any physician who has had any experience of syphilis knows that things will not remain as they are, and that other lesions are in imminent proximity. Unfortunately, we do not finish with syphilis after a few weeks of mercurial treatment. Therefore, it is necessary to resume treatment at a certain time.

But when and under what conditions should it be resumed? On this point there are differences of opinion; and here arises one of the most important questions concerning the therapeutics of syphilis—a capital question, on which depends the success or

failure of medication, and which consequently requires to be discussed in all its details.

Here we have to choose between two methods in the general management of the treatment of syphilis. Both of these agree on the primary point—namely, the necessity for further treatment—but they diverge absolutely in the *modus agendi,* or the conditions of carrying out this treatment.

The one method only treats the disease on the occasion of its ulterior manifestations. In the intervals between these manifestations it does not intervene, but remains inactive, maintaining an attitude of vigilant expectation.

The other, on the contrary, treats the disease, not only on the occasion of its symptoms, but independently of them, in the periods of quiescence, with a view to conjure the manifestations to come by attacking the principle from which they are derived.

For example, suppose a patient has been affected with a chancre, followed by divers secondary symptoms, such as roseola, mucous patches, etc. He has been treated for these lesions, and they have disappeared; what is to be done with this patient in the present and in the future? All agree that he requires further treatment, for he is not cured; fresh manifestations will appear, and fresh treatment is required to silence them.

But when and under what conditions should this treatment be resumed? It is on this point that opinions are divided between one method and the other. Those who advocate the first method tell us that, as the patient has no symptoms at present, he should not be treated. They will wait till a new symptom appears, and then only resume treatment. Then, if another period of quiescence follows, treatment is stopped till further symptoms appear, and so on. In short, this method consists in *only treating syphilis during the presence of symptoms.*

One of the eminent exponents of this doctrine, Diday, formulates his programme thus: "At the time of the outbreaks attack syphilis energetically, but during the intervals of quiescence

between the outbreaks spare your patients a treatment which is as useless as it is untimely."

This doctrine consequently is based on two principles: (1) To abandon syphilis to itself during its periods of quiescence; (2) to wait for what is considered as a "therapeutic opportunity" before treating it. Hence the name *opportunist* which has been applied to this doctrine. I do not know who first gave it this name, but it seems to me a good one to retain.

The second method is quite different to the preceding. Certainly, it has one point in common with it—that is, to treat syphilis at the time of its manifestations; on this point there are no contradictory opinions. But, apart from this, it differs radically in that, instead of treating syphilis exclusively during its manifestations, it also treats it independently of these morbid symptoms. It treats it both *patent and latent;* it treats it, or strives to treat it, as a diathetic disease, by attacking and attenuating its very principle, by neutralizing, if possible, the origin of these manifestations. It does not wait for symptoms before intervening; it attempts to anticipate them.

Thus, to take the example again which served us before—the case of a patient who has just recovered from a first outbreak by a first course of treatment—the line of action is as follows: After having allowed the patient a certain period of rest, to improve his digestive power and avoid getting accustomed to the drug, a second treatment is instituted without waiting, as in the case of the opportunist doctrine, for new symptoms. Even when the patient is free from the slightest symptom, medication is resumed, because the actual quiescence of the disease does not imply security for the future; and the disease, although showing no apparent signs, is none the less active and persistent in the economy.

In this way, courses of treatment are instituted at varied periods, even when no symptoms are present, always with the view of neutralizing the latent infection, diminishing the risks of recurrences, safeguarding the future, and as far as possible of curing. In fact, this method aims at realizing what may be called a fundamental or preventive treatment.

The differences between the two methods are apparent. The

one only treats syphilis when it is patent; it only intervenes in what is believed to be an opportune manner when there are manifestations. The other treats syphilis when it is both patent and latent; and what especially distinguishes it from the preceding method is that it attacks it independently of actual manifestations by endeavoring to be preventive. The first only attacks the symptoms; the second aims at the disease. Also the latter, by reason of the object it pursues, and which it often attains, merits the name of its *preventive method.*

These are the two methods which present themselves to the practitioner for choice. I shall now attempt to determine their relative values.

CHAPTER XXIV

THE OPPORTUNIST METHOD

THE opportunist method is based on the two following arguments: (1) That specific treatment only acts on the active periods of syphilis—that is to say, on the lesions of the disease, and not on the disease itself; (2) that the results of treatment exclusively limited to the periods of morbid symptoms are satisfactory. Let us examine these two arguments.

1. It is sometimes said that the more a proposition is contestable, or even erroneous, the more it tends to present itself with the decisive manner of a transcendent principle and the sound of an axiom. Such is the case in point, and this is the axiom: "Mercury only acts on the symptoms of syphilis without acting on syphilis." Thus, the mercury which we prescribe for a syphilitic only influences the symptoms of syphilis without having the least action on the disease. Such is the principle.

Truly, we may ask the authors of this axiom how they have penetrated the most hidden mysteries of the therapeutic action of mercury; how they have been convinced that its influence is exerted on the symptoms and not on the disease—on the disease when active, and not on the disease when potential.

Mercury, they tell us, only influences syphilis in a state of morbid activity. But it is hardly credible that a remedy endowed with an antisyphilitic action, so powerful that it is considered as the specific *par excellence* for the disease, should only be capable of exciting this action when the disease is in a state of activity; that it is all-powerful to-day during an actual manifestation, and inert in a fortnight, when this manifestation has disappeared; that, with intervals of a few days, it becomes by turn active and inactive, according to the eventualities in evolution of a symptom of the disease! If this were so,

it would upset the general ideas of therapeutics, as well as the laws of common sense.

It is also stated, which is the same thing in another form, that mercury only acts on the symptoms, and does not influence the disease. This assertion is equally objectionable. In my experience, mercury modifies, subdues, and checks nearly all the phenomena of the disease, whether they consist in superficial or deep lesions, or in symptoms without lesions, such as neuralgia, or general disorders, such as anæmia, asthenia, etc. But how this admirable remedy, acting on nearly the whole of syphilitic manifestations, can remain without influence on the origin from which all these manifestations are derived, and never enter into conflict with the material cause which is common to them, is beyond my comprehension, and I refuse to admit such a singular subdivision of the therapeutic action of mercury. Moreover, this doctrine is contradicted by clinical experience. A few examples will suffice to show this:

Let us see what becomes of secondary syphilis in subjects who have been submitted at an early date to the action of mercury—from the date of the chancre, for instance. Under these conditions, it is, so to say, the shadow of its former self. It is reduced to a few benign and superficial signs; it may even be reduced to a state of quiescence. This result is difficult to explain except by the direct action of the mercury on the main principle of the disease, whether this be virus, microbe, or toxin. It is evidently not by the action of mercury on the symptoms that this modification or quasi-transformation of the disease has been produced, since in the matter of symptoms there have been few or none. It must therefore of necessity be the result of a mercurial influence on the morbid germ.

Another consideration of a convincing nature is the following: It is not uncommon, in the case of a newly married couple, to see a healthy woman have several pregnancies, resulting in a series of abortions, still-births, or feeble infants who soon die. On investigation, this is found to be due to syphilis in the husband which has been incompletely treated. Nevertheless, the husband is healthy in appearance, and has had no symptoms since marriage. He is again treated with mercury,

although he has no symptoms, and in two or three years his wife becomes pregnant again, and gives birth to a healthy child, and several other healthy children afterwards.[1]

This miracle is due to mercury which has produced this effect by acting on a man who was apparently healthy, and who had had no signs of syphilis for a long time, but who was in a state of latent syphilis. In this case, mercury has not acted *on symptoms,* because there were none; it has not acted on syphilis in a state of morbid activity, because this syphilis has long been quiescent. It must, therefore, in the absence of symptoms, have exercised its influence on the *actual principle of the disease.*

2. We are told that the method which limits the application of specific treatment to the active periods of syphilis constitutes, on the whole, a good method, since it has cured many patients.

It is far from my intention to dispute the successes which are affirmed by my colleagues whose loyalty and powers of observation are beyond question. I admit these successes, and that for two reasons. The first is that, as in other diseases, there are benign cases of syphilis, in which everything succeeds. The second, which is more important, is that there are many cases in which, owing to circumstances, the opportunist method is almost identical as regards treatment with the other method—for example, cases in which a series of recurrences in the first years of syphilis form the "opportune" indication for a series of treatments.

But if the opportunist method can claim successes, it is necessary to add that it is responsible for numerous failures. I have often seen it responsible for veritable disasters. It is not only an intentional method practised by certain physicians; it is also the irrational practice of many patients who practice therapeutic opportunism in syphilis without knowing it. If they have a symptom, they quickly demand treatment, which is carried out regularly till the symptom has disappeared; then they return to expectation. A fresh symptom develops, and

[1] Several cases of this kind will be found in my book on "L'hérédité Syphilitique," 1891.

they resume treatment; then expectation, and so on, always in the same way. But as for undergoing preventive treatment during the periods of quiescence, they never dream of it. They think it is all over "because they have nothing the matter"; therefore, what is the use of treatment? Hence these patients, thanks to their system of indifference, carry out the opportunist programme, which consists in treating syphilis at its periods of apparent activity, but not when it is quiescent.

But it is in negligent and indifferent patients of this kind, who are only treated "when they have something the matter," that tertiary syphilis is especially severe. It is the unconscious opportunists who furnish the largest contingent of tertiary syphilis. What is the most common history of patients who come to our hospitals with tertiary syphilis? This history may be summed up as follows:

Syphilis contracted six, ten, twelve, or fifteen years ago. At the beginning, treatment of a few weeks' or months' duration. Reappearance of some lesion, and further treatment. Nothing further appears, and the patient leaves off treatment. Then, after a variable period, some other symptom develops which causes more anxiety, and more prolonged treatment is instituted. Then a period of calm, which may last for several years. Finally, a tertiary outbreak, always serious and sometimes fatal.

This is the history which we hear every day, and I possess hundreds of similar observations, of which the following are a few examples:

1. A young man contracted syphilis, and was treated for a few months in the secondary period. Four years later a tubercular syphilide appeared on the penis; then only a second course of treatment was taken. The following year, recurrence of the same lesion on the penis, which was treated for a few weeks. Two years later a tubercular syphilide occurred in several places, and became confluent.

2. A young man has been under my observation for seventeen years, and has always been well treated every time some syphilitic lesion was present; but, in spite of my advice, he has always neglected treatment as soon as symptoms disappeared.

To all my requests to continue treatment after the disappearance of symptoms he always gives the same reply: "But I have nothing the matter; what is the use of drugging myself indefinitely? If I have anything the matter, you may be sure I shall come and see you." In fact, he is an opportunist, and a most convincing example of the opportunist method. Without mentioning sundry secondary lesions, this patient was affected three times with severe tertiary symptoms—namely, sarcocele in the third year of the disease, tibial exostosis in the fourth year, and another exostosis in the same situation during the thirteenth year.

3. Here is a more grave case: Syphilis in 1868; opportunist treatment. In the sixth year of infection a gummatous syphilide of the pharynx, causing extensive destruction; in the seventh year ocular paralysis; in the twelfth year cerebral syphilis; two successive hemiplegias, with multiple incidents of specific encephalopathy, terminated by death.

4. Syphilis in 1868, always treated by the opportunist method. A series of gummata and tubercular syphilides during the fourth to the nineteenth year.

I could mention many other cases of the same kind, for such cases are literally matters of daily observation.

My opinion is definite as regards the opportunist method. In principle, I condemn a method which is content with waiting for events, in "seeing what will happen" (as if we did not know what will happen!), and which intentionally refuses to make any preventive effort against the disease. I condemn this method by experience, because I know of so many failures and disasters from its practice that I am led to consider it as one of the most common causes of tertiarism. After what I have seen of it, I believe that every patient treated exclusively by the opportunist method is exposed to great risks in the future. And, as it is necessary to speak plainly on matters which essentially concern the health of our patients, I regard the opportunist treatment of syphilis as a bad and dangerous form of treatment.

CHAPTER XXV

THE PREVENTIVE METHOD

After what I have just said concerning the opportunist method, I can deal comparatively briefly with the second method which remains for discussion—namely, the rational or preventive method—for the criticism which I have made on the former has explained in advance the two principles which serve as a basis for the latter.

It follows from what has preceded (1) that mercury exerts a therapeutic action on latent syphilis; (2) that it is not only capable of curing actual symptoms, but exerts a preventive action on the diathesis.

These are the two fundamental principles on which is founded the method which we are now studying—a method which is rational theoretically, preventive in its aim and object, and generally preventive in its results.

This method, like the preceding one, attacks syphilis during its activity, but differs from it in endeavoring to attack syphilis in its potentiality, with a view to attenuate or neutralize the germs of the disease, to prevent the evolution of near or remote phenomena of the diathesis, and, above all, to safeguard the future, as far as a rational form of treatment can do so.

For many considerations, which I shall shortly explain, it is this method which we should choose for the treatment of our patients. But before entering into the details of this method, it is necessary to examine certain objections which have been raised against it, and to judge if these objections should influence our choice.

1. It has been said that to treat latent syphilis is to treat something invisible and intangible—to make war against an enemy we cannot see, and whose forces we cannot estimate. It

has even been said that "to treat syphilis apart from its manifestations is to fight against windmills." But, following the simile, an enemy we cannot see is no less an enemy, and however little we are certain of his presence, the most elementary prudence warns us to be on our guard against him. However, to return to clinical experience: being given a case of recent syphilis, submitted only to a preliminary treatment, are we not absolutely certain of the permanence of this syphilis in the economy? Are we not absolutely certain that, however latent it may be to-day, this syphilis will not fail to manifest itself at an early or remote period by some manifestation? Are we not absolutely certain that this syphilis, abandoned to its own evolution, has a great chance of ending in some more or less important, perhaps even grave, tertiary lesion?

The replies to such questions are definite. The enemy is there, at our gates; we do not see him, but he is there none the less, and his future assaults will not be imaginary events: without any doubt, they will occur some day. And when, with the means at our disposal, we attempt to fortify ourselves against him; when we endeavor, by a method of treatment which we have the right to consider as preventive, to attenuate the virulent principle which has taken possession of the organism, this is called "fighting an imaginary enemy"!

We are accused, when we treat syphilis in the latent periods, of "making war against an invisible and intangible enemy." But does a practice of this kind constitute in medicine an exceptional or isolated fact? On the contrary, it is a common proceeding which is used every day in a number of diseases other than syphilis. Do we treat gout, for instance, only during its attacks? Do not a number of gouty subjects go to Vichy, Contrexéville, or Carlsbad, on the advice of their physicians, when they are not suffering from the gout, when their gout is *latent?* Is scrofula treated exclusively at the periods when it manifests itself by adenopathy, ulcers, abscess, white swellings, or lupus? A number of patients who are scrofulous potentially, but who have no actual lesions, are sent to the seaside by their physicians with the object of preventive treatment. The same with rheumatism, which is not treated only at the time of its

attacks; the same with paludism, which is not treated only in its febrile state; the same with biliary and renal lithiasis, which is treated at other times than during the migration of calculi, etc.

Hence there is nothing abnormal, irregular, or extraordinary in treating syphilis in its periods of quiescence, since this is done in the case of many other diseases. To treat a disease which surely exists in the organism, although it is not rendered evident by any actual symptom, constitutes a common method, accepted by all, and of daily usage. This is called preventive medicine, and is the best of all when it is of possible application. Why, then, in syphilis, should we not benefit our patients by a therapeutic method of this kind? The first objection to the method we are discussing is therefore without the least value.

2. The second objection is stated in the following way. When we treat active syphilis with actual symptoms we know what we are doing, because we have a criterion in the influence exercised on the symptoms by the remedy. But to treat latent syphilis is to work in the dark without knowing what we are doing, for there is no control by which to judge what we have done. To treat it in this way is to give remedies at hazard and without control.

To this I reply that it is not giving remedies at hazard to prescribe even for latent syphilis one of the two agents the anti-syphilitic action of which is accepted by all. It is not treating syphilis in the dark to attack it by these two remedies, either in doses recognized as normally efficacious, or, still less, in doses which have previously exercised a curative influence on the patient. Lastly, it is not acting without control to treat latent syphilis in this way. For we have the control in the future evolution of the disease, in the way in which recurrences diminish or disappear, and in the general results of such practice.

3. There is still a third objection which hardly deserves any more attention. It is said that to treat latent syphilis is to be compelled to treat it for life. For if it is treated to-day in a latent state there is no reason why it should not be treated in

the same latent state in a year, in two years, in ten years, in twenty years, and so on.

This objection would have some value if we treated syphilis because it was latent, and if we found in this fact a motive for intervention. But we do not treat syphilis because it is latent; we treat it *although latent,* which is very different, and at a time and under conditions when we have reason to believe that it is still active, or when we have reason to fear some near or remote manifestation. If, with this intention, we treat it to-day, and again in a year or two years, this does not imply in any way that we are under the obligation to treat it indefinitely and for life.

This preventive treatment certainly imposes on us a length of time, and this term may be difficult to fix, but we shall attempt to fix it by observation and experiment. In any case, we keep to the principle of not abandoning the disease to itself till after a long period of treatment, and under conditions where we believe we have a guarantee against the possibility of recurrences and future outbreaks.

On the whole, therefore, the different objections which I have just examined are hardly of a nature to turn us from the course which other important considerations have authorized us to judge more rational and more certain. Theoretically, the preventive method is of a nature to merit approbation, and practically it justifies the preference over the opportunist method which is accorded it by the generality of practitioners.

In fact, the preventive method confers on patients the double benefit of rendering the secondary period nearly always mild and tolerable, and the tertiary period free from manifestations in the majority of cases. These two points claim our attention.

1. With regard to the first, the proof is patent and of every-day occurrence. In patients treated by the preventive method the secondary period, with few exceptions, is only manifested by a few benign symptoms. In nineteen cases out of twenty the patients escape with a few spots on the skin, a few erosions of the mouth (due to persistent smoking), a few insignificant crusts on the scalp, and some cervical adenopathy which passes almost unnoticed.

Compare these abortive secondary syphilides with those which follow the opportunist method, where treatment is limited to the first outbreak of symptoms, leaving the second at liberty to develop. Compare them with the state of numbers of patients who, after being treated for the chancre or for the first secondary eruption, have given up treatment of their own accord. It is unnecessary to dwell on this point, for the evidence is too notorious.

2. The proof of the second point is more difficult, because it requires observations which, to be of any value, must have been followed for a considerable time. To speak of the comparative results in the tertiary stage requires long-continued observation for ten or even twenty-five years. Such facts are difficult to collect, but I now possess a good number of them, having, thanks to the advice of one of my former teachers, commenced them at the beginning of my career. In such a disease as syphilis "the only good observations are those which embrace a great lapse of time, veritable segments of life, and that because these only allow us to judge of the evolution of the disease, its real prognosis, and the value of the therapeutic methods opposed to it."

Profiting by a certain stock of old observations, some of which go back to the first days of my career, I think I am authorized to present the two following propositions as the result of my personal experience:

1. That syphilis which pays the heaviest tribute to tertiarism is that which has been either abandoned to its own evolution, or insufficiently treated, or has been exclusively treated during the periods of activity, which constitutes the programme of the opportunist method.

2. On the contrary, that syphilis which has been treated, not only during the presence of symptoms, but apart from and beyond its stages of morbid activity—in a word, syphilis which has been submitted to the multiple exigencies of the preventive method is that which furnishes the smallest contingent of tertiary cases.

I do not say that this method, even when rigorously applied, always preserves patients from tertiary eventualities. But I

say, from my own personal observation, that it preserves them in the great majority of cases.

This method, therefore—in my opinion, at any rate—constitutes the most certain resource which we can offer to patients against the dangers of syphilis, which, with few exceptions, reside in the eventualities of the tertiary stage.

Advantages of Intermittent Treatment

The preceding considerations have led us to the resolution of adopting what we have studied and defined under the name of the preventive method. It remains to be considered how this method should be carried out, and for how long.

Before commencing this subject I must make a preliminary observation, which would be superfluous were it not necessary to disarm criticism. This is, that the principles in question and the rules of practice which I shall indicate in what follows are not systematic, invariable, or absolute. I have no pretension to trace a plan of therapeutic campaign which can in all possible cases be followed to the letter and executed punctiliously, after the manner of a military maneuver. I know well enough that there is no treatment capable of application to all cases indifferently, and that the disease is not an abstract thing which can be treated like a mathematical equation. I am well aware that it is necessary to individualize the treatment of syphilis as in other diseases, and that there are no invariable rules to formulate for syphilis any more than for any other pathological individuality.

Therefore, the therapeutic indications which follow must only be taken as general formulæ capable of application to ordinary cases, but liable to an infinity of alterations of all kinds, according to the many eventualities peculiar to each individual case.

There are two precepts derived from chemical experience which govern the general management of the treatment of syphilis. The first is that, in order to obtain the sum total of useful effect, specific treatment should be administered by *intermittent courses*—that is, in a discontinued manner. The

second is that, in order to realize the preventive influence which we hope to obtain, specific treatment should be *prolonged for a long time.*

1. It has been said in a theoretical manner that syphilis is a continuous and permanent infection, and therefore that it should be treated in a continuous manner. The induction may be rational, but it is not capable of practical application, and that for the two following reasons:

(1) The stomach is not an indefatigable organ which can ingest remedies indefinitely, especially such remedies as mercury and iodide. A continued medication of this kind only ends in causing dyspepsia, gastralgia, enteralgia, or diarrhœa. It is true that we can relieve the digestive tube by substituting for the method of ingestion some other method of administering mercury, such as inunction or injection. But experience shows that mercurial treatment, in whatever form it is prescribed, cannot be borne beyond a certain time without fatiguing the organism and reacting on the general condition of nutrition. All physicians who are in the habit of using mercury are unanimous in saying that mercury is an admirable remedy which, with rare exceptions, is marvelously well borne by the organism, but on the condition that its usage is not continued for too long a time. After a certain time it is badly tolerated, and its administration must be suspended on account of gastro-intestinal trouble, or because of general symptoms of atony, weakness, or anæmia. Therefore it is impossible to give mercury in a continuous manner for the whole time which is necessary for the complete treatment of syphilis.

(2) It is a general law in therapeutics that the continual usage of a remedy ends by determining a kind of *habit,* which weakens or even neutralizes the physiological or curative effects of this remedy. It is incontestable that one gets accustomed to certain medicaments which, while very active at first, eventually have no action on the blasé organism. If one takes an opium pill to-night, it will have a certain effect; if one is taken a few days later, it has less effect; and if continued for several months, at the end of this time it will not have the least narcotic or sedative effect. Mercury is also a remedy to which

the economy becomes accustomed, and which, after a certain time, loses all or part of its influence.

It is not uncommon, in the course of mercurial treatment which has been continued for a long time without interruption, for fresh syphilitic symptoms to appear. If more mercury is given for these its action is slow, incomplete, or almost nil. Under these circumstances the remedy must be suspended for several weeks, and resumed later on. Then the remedy exerts its normal action, the temporary diminution of which was due to habit.

It is therefore evident that long-continued mercurial treatment loses a great part of its influence. I think that when a patient has been submitted to certain doses of mercury for two or three consecutive months, any further doses which are administered are pure waste, and that the remedy has become, if not altogether inert, at any rate less active than at first. I think that six months of continuous mercurial medication produces infinitely less curative effect than six months of the same medication divided into periods of several weeks in the course of twelve or fifteen months. I have even seen patients derive less benefit from a whole year's continuous mercurial treatment than they would probably have obtained from less mercury more wisely distributed. And what is true for mercury is no less true for iodide of potassium.

On the first point, therefore, we may conclude that by analogy and by direct experience there is every advantage in administering mercury and iodide by *intermittent treatment.*

Necessity for Prolonged Treatment

Our second proposition is thus formulated: In order to realize the preventive action which we hope to obtain, it is necessary for specific treatment to be administered for a long time. But this condition, on which depends the success or failure of the treatment, is precisely that which is the least often realized in practice. No doubt all our patients have full intention of being treated, but in reality very few persevere sufficiently in their treatment. And the same with physicians: all endeavor to

improve the treatment of syphilis by different methods, but many are satisfied by courses of treatment which are too short to be really efficacious.

No doubt, if only a temporary effect is required from specific medication, a few weeks or months will suffice to " whitewash " a patient, but if a durable action is wanted as a safeguard for the future, it can only be obtained by prolonged treatment.

The point we have now to consider is the length of time required for the treatment of syphilis; I do not say for the *cure* of syphilis (for this word raises another question—whether syphilis is ever cured), but to render it inoffensive and silent, so that there may be nothing to fear from it even in the remote future.

It is hardly necessary to say that a problem of this kind is incapable of an absolute solution which will apply to all cases. There does not exist a chronological limit for the duration of the treatment of syphilis. We can never say how many years are necessary for the treatment of syphilis, for what is enough for some cases is insufficient for others, and perhaps excessive for some others. A man of the world may ask his physician how long it will take to cure syphilis, but a physician can never reply to this question in a mathematical way. For by his general or special knowledge every physician has the formal conviction that the duration of treatment applicable to such a disease as syphilis cannot be determined in advance, even approximately. The duration must of necessity be variable, because it is subjected to many conditions relative to the intensity of the disease, the nature and frequency of its outbreaks, and its general evolution.

Thus certain cases of syphilis yield almost at once to treatment which is of moderate therapeutic intensity or short duration, while others are for a long time refractory to energetic medication. Among the latter may even be distinguished a particular kind, under the name of *recurrent syphilis,* concerning which I may say a few words.

Syphilis of this kind is remarkable from two almost contradictory points of view: First, in the successive recurrences, which may sometimes become subinvolutive; secondly, in the

lesions which compose them being far less refractory to treatment than would be supposed from the character of the disease; on the contrary, they are as a rule cured easily. These singular cases of syphilis are therefore always in a condition alternating between cure and eruption. No sooner has one outbreak subsided, when another appears, and, curiously enough, most often of the same morbid type. For example, one of my patients presented in the course of three years five recurrences of roseola. In another case I observed in the course of six years fourteen eruptions of an erythematous syphilide.[1] A young woman was affected during four years with incessant recurrences of a papulo-psoriasiform syphilide which was always localized round the mouth. In another patient I have cured fourteen times an exostosis of the frontal bone, which disappeared during treatment, to reappear as soon as this was discontinued for a few weeks or months. One of my colleagues, who contracted syphilis in the exercise of his profession, told me recently that for ten years he could not leave off iodide for more than a fortnight or a month without some recurrence of specific symptoms. Lastly, I will mention the case of a woman who for twelve years was a prey to incessant recurrences of tertiary manifestations, which were always easily cured, but were reproduced as soon as treatment was suspended.

Such cases are, however, rare, and we will pass on to consider the approximate average duration of treatment for more common cases. This average duration has been very differently estimated, and it will not be without some historical interest to recall certain opinions which have been current.

Dupuytren, for example, continued the administration of mercury after cicatrization of the chancre for the same length of time that it took to heal the chancre. Other practitioners formulated fixed doses which were supposed to be sufficient for the treatment of syphilis, such as one hundred Dupuytren's pills, or one hundred doses of Van Swieten's liquor. Chomel paid more attention to the duration and continuity of treatment than to the dose, and recommended five or six months of con-

[1] Syphilis with multiple roseolas is not rare. I have collected more than sixty cases in a special article (*Annales de Derm. et de Syph.*, 1896).

tinuous mercurial treatment. Lastly, Ricord, in a book which I had the honor of editing, gave the result of his long experience as follows: "Six months' mercurial treatment, with a daily dose which influences the specific lesions and indicates, after they have disappeared, that the remedy still acts by its physiological effects. Then three months of iodide treatment destined to prevent the later accidents of the diathesis. Such is the treatment which gives the most permanent cures, which succeeds in the great majority of cases in neutralizing the toxic virus, and in curing syphilis at least in the generality of its manifestations."

To-day we are far from such valuations—in fact, *the more one studies syphilis, the more one extends the chronological limits of treatment judged necessary for its cure.* This is what I have arrived at personally. At the beginning of my practice I proceeded by treatment which seemed long at that time, and which now I regard as short. Later on, after further experience, I gave longer treatment than appeared necessary at first. Finally, observation convinced me that, in order to obtain from mercury all that it is capable of—to obtain not only a curative influence for the present, but a *preventive* influence, it is necessary to administer it for a very long time—much longer than is usually done.

1. In the first place, if mercury is given, as Dupuytren suggested, for a time after the cure of lesions equal to that which was required for their cure, the disease is left with all its ulterior consequences.

2. In the second place, if mercury is administered according to a fixed number of doses, only a temporary result is obtained. With treatment consisting in one hundred sublimate pills or one hundred doses of Van Swieten's liquor, the symptoms of a day only are treated, and future manifestations retarded. In this way the diathesis is not influenced in a sufficiently energetic manner to obliterate the source of future phenomena.

The results of experience show that many patients, treated only for two or three months at the onset of the infection, have been affected later on with serious lesions, sometimes

fatal. In my statistics I find it is patients of this class which furnish the largest contingent of tertiary cases, for subjects who abandon themselves exclusively to expectation are rare.

The most common history of tertiary syphilis, with regard to antecedent treatment, is as follows: A young man contracts syphilis, and is treated for two, three, or four months. The symptoms disappear, and he thinks himself cured. The illusory guarantee of present immunity appears to him definite. Then new manifestations appear suddenly in the midst of comparative security, and these are sometimes serious, even liable to a fatal termination.

3. I have also seen that, after more prolonged treatment—for example, that formulated by Ricord—the diathesis may still manifest itself by later outbreaks, and thus give evidence of its presence in the organism. I have in my notes a number of cases where patients, after being regularly treated by mercury for five or six months, have been affected later on by more or less serious lesions. It is therefore certain that mercurialization of five or six months is not sufficient to extinguish the disease and prevent danger for the future. I make this statement with all due respect to Ricord, my former chief, because clinical experience has shown it me so many times.

It is now more than thirty years since, in a series of lessons devoted to this subject,[1] I denounced the manifest insufficiency of the methods of treatment then in vogue, and urged strongly the necessity for more prolonged treatment. I said then that "it is necessary to submit patients to the action of mercury for two years, . . . and this is not all, for I am of opinion that later on the iodide treatment should be added to the mercurial."

It is needless to mention the objections and criticism that resulted at that time from such a proposition. I was accused of exaggeration; I was represented as a fanatic for mercury, and my patients as victims of therapeutic poisoning. It was said that I "gave mercury to excess," and that between my treatment and syphilis it would be better to choose syphilis, because of two evils one should always choose the less.

[1] "Lessons on Syphilis, studied especially in Women," 1873.

But I am fully consoled for these amenities to-day, for, to my great satisfaction, the "dangerous heresy" of which I was then proclaimed guilty has become nowadays the dogma in vogue. When I see the practice of my colleagues, it is evident that things have much changed of late, and that syphilis is no longer treated as it was thirty years ago. No confidence is now placed in the short periods of treatment of former days, and the doctrine of prolonged treatment prevails.

Moreover, if I refer to published opinions, I find that Berkeley Hill states that two years are not too much for the treatment of syphilis. Alfred Cooper accepts the same term of two years. Weber, of New York, with the majority of American physicians, urges the necessity of long-continued treatment, and proposes to administer protoiodide for a year and a half or more, with suitable intermissions. Keyes advises the usage of the same remedy for an average period of two and a half to three years. Neisser says that treatment should last from two to four years without taking account of the presence or absence of symptoms. Lewentaner treats his patients for four years. Martineau raises the duration to five years. Lesser says that a chronic disease requires chronic treatment. Zeissl "rallies unreservedly to the opinion represented by the French (Fournier and Martineau), that the treatment of syphilis should be prolonged as long as possible." Besnier declares that the treatment of syphilis includes a series of years, and often long periods of existence. Denis-Dumont considered that syphilis should be treated during life, and that the dawn of each season should be saluted by an iodide treatment till death!

The average duration which is required for the treatment of syphilis is open to discussion, and will certainly be discussed for a long time yet; but it is only a matter of figures. As to the principle, the matter is settled. The short-time treatment has had its day, and is renounced because it has been tried and found wanting. It is almost universally agreed that syphilis should be attacked by treatment of long duration.

And how can it be otherwise? Whatever may be the pathogenic agent of syphilis, it is the prototype of a chronic infec-

tious disease, a diathesis which is active and persistent in the organism. But general pathology teaches us that diseases of this kind require long-continued medication to eliminate them from the organism, or at any rate to render them inoffensive. *A chronic disease requires chronic treatment.* Such is the law.

No one can suppose that gout is cured by a few weeks' residence at Vichy, or by a medication of a few months. All practitioners are in accord in not promising a cure, but only the abatement of symptoms, by several seasons at Vichy, or by long-continued treatment and hygiene. In the same way scrofula is not cured by a visit to the seaside for a few weeks, nor by treatment with cod-liver oil, etc., for a few months. Several years are required to modify the scrofulous temperament. The same with rheumatism, paludism, etc.

Syphilis is no exception to this rule. The syphilitic temperament, like the scrofulous, gouty, or rheumatic temperament, is only modified or corrected at the price of prolonged treatment by long-contiued depuration. The treatment of syphilis must be *chronic treatment.*

Since mercury, of the two remedies at our disposal, constitutes the most certain preventive, it follows that a prolonged treatment by mercury is required for the cure of the disease, so far as it can be cured.

But prolonged treatment by mercury is a vague and arbitrary term, and for practical purposes it is necessary to give a definite figure. In an approximate manner, and subject to variations, I formerly fixed this figure at two years as an average, adding that by force of circumstances it was often necessary to exceed this period. But to-day, after many years' experience, I consider that this estimation, which was formerly objected to as excessive, is not sufficient. I have been led to believe that mercurial treatment of syphilis during the two first years is not enough, because I have so many times seen the embers revive after treatment of this duration. I now consider that, as a general rule, it is wise to continue mercurial treatment at intervals during the third, and perhaps even the fourth, year of the disease. And it is often necessary to exceed this approximate average of three years' mercurial treatment,

owing to the course of events. I have the notes of a number of patients in whom I was obliged to continue mercurial treatment in the fourth, fifth, and sixth years for different reasons, either on account of refractory lesions and unexpected recurrences, or because of the severe character of the disease.

And this is not all, for, according to many authorities, the mercurial treatment of syphilis requires a necessary complement—namely, the administration of iodide. In fact, it is the general opinion that a course of mercury should be necessarily followed by a course of iodide.

Before dealing with the subject of iodide treatment, I will reproduce here the conclusions to which I was led in studying the etiology of tertiarism in my "Treatise on Syphilis," showing the evil results of treatment of short duration.

"Of all the causes of tertiarism, there is one which by itself is more influential than all the others put together, and which may be called the chief cause. This consists in the absence or insufficiency of a corrective treatment in the early stages of the disease. I consider this to be the principal cause for three reasons:

"1. In most cases it is the only fact which can be invoked as the cause of the tertiarism. When the etiology of tertiarism is studied in a manner which is seldom done, it is found that in a great number of cases tertiarism is not explained by any individual, hereditary, or external causes. Many subjects with a good constitution, or even in a state of good health, suffer from tertiarism, in spite of a hygiene which leaves nothing to be desired, in the absence of any constitutional weakness or local cause—in a word, under conditions which, by themselves, are insufficient to cause tertiarism. Why, then, do they end in this way? After a careful analysis only one plausible reason is found: the absence of corrective treatment at the beginning of the disease. These individuals have either not been treated, or more frequently they have been insufficiently treated. This is the only explanation which is found in their antecedents.

"2. My second reason is that tertiarism is frequent in subjects who have either not been treated or who have had insufficient treatment at the beginning of the disease.

"As the result of general experience and daily observation, I maintain that syphilis, when abandoned to its own evolution, or incompletely treated in its primary and secondary stages, has every chance of ending in tertiarism. I do not say that it always ends so, but I affirm that this is its termination in the great majority of cases. Expectation or short treatments abound in disastrous results, and leave the door open to tertiary events. In this connection may be mentioned the formidable accidents so often observed after what has been called ignored syphilis, or syphilis which has escaped any therapeutic intervention. In short, nothing is better proved than the absence or insufficiency of specific treatment as a cause of tertiarism.

"3. Inversely, tertiarism is rare in subjects who have undergone prolonged treatment. It is far from my intention to claim that treatment is an absolute guarantee against tertiarism, for I have many times seen syphilis end in tertiarism, in spite of the most rational therapeutic efforts. But I affirm that a methodical and prolonged treatment constitutes a safeguard against tertiary syphilis in the large majority of cases. In support of this statement I could produce hundreds of observations in which syphilis, thanks to treatment, has never passed the secondary stage even ten, twenty, or thirty-five years after its origin, and I defy any physician not to bring a personal contingent of analogous facts in support of this statement. The proof of this point seems to me established.

"This proof, moreover, implies a counter-proof, which I will mention for two reasons: first, because it is essentially instructive in itself; secondly, because it constitutes a certain consolation for syphilitics who are anxious about their future, a moral comfort which I am happy to offer them. It follows from the results of profound inquiry into the therapeutic antecedents of subjects who have ended in tertiarism. I will explain.

"In a given number of subjects who have presented certain tertiary manifestations, what is the relative percentage of those who have been treated and those who have not been treated, between those who have been treated in an insufficient, medium, or prolonged manner? From numerous statistics which I have collected for a long time on the capital question of tertiarism,

I have been able to make an inquiry on this point, and this is how I have proceeded:

"I have taken 4,000 subjects affected with tertiary syphilis. A considerable number of these being excluded on account of uncertainties concerning the therapeutic antecedents, there remain two thousand three hundred and ninety-six cases in which the nature of the treatment followed by the patients is sufficiently precise. The quality and duration of this treatment is shown in the following table:

Absolute absence of treatment	197	cases.
Mercurial treatment less than three months.	490	"
Mercurial treatment less than six months.	399	"
Mercurial treatment less than twelve months	594	"
Treatment for about one year	146	"
Treatment for one to two years	357	"
Treatment for two to three years	98	"
Treatment for three years	34	"
Treatment for more than three years	29	"
Exclusive iodide treatment	45	"
Treatment by sarsaparilla, etc.	7	"
Total	2,396	

These figures may be divided into three groups:

"1. A group in which patients were either not treated at all, or in a very incomplete manner, all treatment less than a year in duration being by experience judged insufficient.

"2. A group in which patients were treated in a medium manner from one to three years.

"3. A group in which patients were properly treated for three or more years.

"The first group furnishes a contingent of one thousand eight hundred and seventy-eight cases of tertiarism, the second group a contingent of four hundred and fifty-five cases, and the third group a contingent of sixty-three cases.

"Reducing these figures to percentages, to make comparison easier, we find that out of one hundred patients with tertiary affections, seventy-eight had not been treated at all, or were

treated incompletely, nineteen had received moderate treatment, and three only had been properly treated.

"What a significant and instructive disproportion between these different figures! Such a disproportion, I think, requires no comment.

"On the other hand, what a relief for prognosis, if it is true, as these statistics tend to show, that with proper treatment the risk of tertiarism is reduced to the small figure of three per cent.!

"What a consolation for a patient to be able to say, 'If I pay attention to my syphilis, and undergo proper treatment, I have every chance of escaping tertiarism, and being free in the future from the perils of tertiary syphilis'!

"We may conclude that the question of treatment is capital in the etiology of tertiarism, and certainly the chief reason of the extreme frequency of tertiarism in society is the insufficiency of the treatment opposed to the disease.

"I cannot repeat too often that what renders syphilis grave is most often the careless manner in which it is treated. It is necessary to do as I have done, and collect several thousand observations on tertiary syphilis with regard to their therapeutic antecedents, to form any idea of the indifference and negligence of patients concerning their disease.

"Who would believe, if the figures did not prove it, that out of two thousand four hundred syphilitics, nearly five hundred could be found so ingenuous as to consider themselves rid of syphilis by less than three months' treatment? Who would believe that out of these five hundred patients there were twelve who told me that they were only treated for four weeks, three weeks, fifteen days, ten, seven, five, and even three days?

"There was nothing original, therefore, in the remark of the celebrated humorist who suggested that syphilis 'should be treated with contempt,' for this method had already been adopted by numbers of patients!"

Complementary Treatment by Iodide

I may say at once that it is a very difficult question to decide whether iodide of potassium should be administered after a mercurial treatment, and administered in the manner in which mercury is prescribed—that is to say, for a more or less prolonged period. Yet, in practice, it is carried out as if the question was settled. There are few physicians who do not submit their patients to iodide treatment after having treated them with mercury. Moreover, patients ask for this remedy, and often take it on their own initiative, for they regard it as an eliminator of mercury, as a depurative which will clear from their body a detested poison.

It is certainly not with this idea that we give iodide after mercury in the treatment of syphilis, but this practice does not seem to be based on any theoretical conception. It is said that iodide is the curative agent *par excellence* for tertiary syphilis, and therefore that it should be preventive. This would require experimental proof by comparing for a long period, in a certain number of patients, the effects of exclusively mercurial treatment with those of mercurial treatment followed by iodide. But it does not appear that such an experiment has ever been tried.

Therefore the practice of associating iodide with mercury is only justified by the good results of mixed treatment. But in this mixed treatment how much of the success is due to the iodide cannot be decided. All that I can say on the question is that iodide is not indispensable—at least, in all cases—as a complementary treatment to mercury. This is proved by my having met with a number of subjects who were absolutely intolerant of iodide, and who were cured by mercury alone.

However, it is not my intention to dispute the utility of the complementary treatment by iodide, especially as nearly all my patients have taken the combined treatment. But, in proclaiming the successful results of this treatment, it is necessary to say that I can only estimate them together, without knowing how much is due to the iodide.

If there is almost unanimous agreement on the advantages

of iodide treatment in the advanced stages of syphilis, there is none the less on the manner in which it should be carried out. The most usual practice is to prescribe iodide *intermittently*, and not in a continuous manner. This is rational and legitimate, for with iodide, as with mercury, accustomance is to be avoided.

Each of these periods of treatment should have an average duration of four to six weeks. To prolong the administration of the remedy for a longer period runs the risk of fatiguing the stomach. The only point disputed is the total duration of this complementary treatment. Some think it sufficient to give iodide from time to time during two or three years. For my part, I proceed as follows, except in particular contra-indications: For the first year, three or four periods of iodide treatment, each of a month's duration; for the second year, three similar periods; for the third year, two similar periods.

But others push the iodide treatment much further, sometimes for four, five, or six years. I know some who prescribe it in an indefinite way, advising their patients to take iodide for several weeks in the spring and autumn every year. I even know certain colleagues who, having been formerly affected with syphilis, take iodide regularly twice a year, although they have had no symptoms for a long time, and are very probably cured. One of these, an eminent physician, whose name I will not mention on account of his high scientific eminence, recently said to me: "It is now seven years since I had the misfortune to contract syphilis. During the first years I took mercury and then iodide, as you advised, and nothing further has occurred. But since then I have never omitted to take a course of iodide twice a year, and I continue to do so; for the more I see in practice, the more I am convinced that syphilis only remains quiescent in the organism, ready to revive on sufficient provocation; and by experience I consider it wise to always hold it in check by a series of annual treatments. Moreover, iodide never did harm to anyone, and the only possible objection is that it may be superfluous. But I consider it far from being superfluous, but necessary, and recommend it to all my patients, as I have kept to it myself."

Is this colleague in the right? In any case, without speaking of perpetual iodide treatment, is it advisable to prolong treatment longer than is generally done, and longer than I practice myself? Or is the indication to renew the administration of this remedy in the advanced stages of the disease as a precaution? These are questions on which we have not yet sufficient experience, and which require long periods of observation for their solution. They are questions of the future, reserved for our successors.

CHAPTER XXVI

CHRONIC INTERMITTENT TREATMENT

On the whole, therefore, it results from what precedes that two major principles dominate the treatment of syphilis:

1. The treatment of syphilis must be prolonged and almost chronic in order to be preventive.

2. This treatment must be intermittent.

On this basis I have instituted a method of treatment, the aim of which is to satisfy both of these indications, and which I have called the *chronic intermittent treatment.*

This method, which is the practical application of the principles I have just enunciated, is very simple. It consists in a series of courses of treatment, at first mercurial, afterwards iodide, distributed during the first years of the disease, and separated by intervals of rest, which are increased in proportion to the length of time elapsed since the beginning of infection.

A practical example will make this clear. If a patient comes to me with roseola and mucous patches, etc., resulting from recent contamination, I prescribe a mercurial treatment—ten centigrammes of protoiodide daily, for example. If things go well, all symptoms disappear in three or four weeks. Nevertheless, I continue the treatment for a few weeks more, making a total of about two months. The first course should be rather long, because energetic treatment at first certainly subdues the evolution of the disease.

After this I suspend treatment, for two reasons: (1) Because the patient will have begun to become accustomed to mercury, so that further doses will have less effect; (2) because to prolong medication runs the risk of causing digestive troubles. I therefore give a rest of four to six weeks. After this I resume treatment, whether the patient has fresh symp-

toms or not. This is where the rational method differs from the opportunist, which only resumes treatment on the occasion of fresh symptoms. Even if the patient has no further signs, I regard it as certain that he is liable to manifestations at an early date, which it is my object to prevent. Moreover, I attach less importance to the symptoms than to the disease, and it is the disease, even when latent, that I am attacking. Hence new treatment, and with the same remedy; for if this has succeeded in the first instance, there is no need to change it.

The second course lasts about six weeks, for this period of six weeks is empirically that which is supported by patients without digestive troubles, and without causing accustomance. After this, two or three months' rest may be given without much fear of serious manifestations, because the disease has been taken in advance. Moreover, this interval favors the action of the remedy later on.

At this period medication is resumed, and always for the same time; then it is suspended for several months; then resumed again, and so on, always with the precaution to give a period of rest after each stage of treatment. For this is the essence of the method, and by proceeding in this way I expect to realize the therapeutic intention which I am pursuing—viz., *to obtain the proper degree of intensity of mercury during the whole course of treatment.*

To resume: I give four mercurial courses in the first year, three in the second year, and two or three in the third year. After this I consider it advisable to give iodide, and to proceed with this remedy in the same way as with mercury—by *intermittent treatment*—each course lasting four to six weeks, according to gastric tolerance, with an average dose of forty-five grains daily. In the same way these courses are separated by longer intervals the further they are from the date of infection. For instance, I prescribe three or four in the fourth year of treatment (sometimes alternating these with mercury if necessary), three in the fifth year, and two in the sixth year.

Such is the scheme of my practice—*chronic treatment, prolonged treatment,* and *intermittent treatment.*

After this exposition of the application of my method to an

ideal case, it is necessary to add that the preceding programme is not absolute. In fact, the treatment of any disease does not lend itself to inflexible rules, and cannot be determined in advance. It is obvious that, like all therapeutic methods, the chronic intermittent treatment of syphilis is subordinate in practice to special exigencies, which are impossible to foresee in each particular case. It is also clear that the preceding programme, although remaining fixed on its principal lines, is liable in practice to numerous alterations.

For instance, in different subjects or in different morbid conditions, the duration of the active periods of treatment requires lengthening in some cases and shortening in others. In the same way, the periods of rest sometimes require increasing and sometimes diminishing. Again, the reciprocal order of these different stages must necessarily be modified according to circumstances, such as the unexpected appearance of symptoms of a secondary character in the tertiary period, the intensity of the disease, the frequency of recurrences and their character, the caprice of tolerance for this or that remedy, and other indications of various kinds.

For example, it is not uncommon for a manifestation of a secondary nature to appear at a more or less advanced stage of the disease, in spite of the most correct treatment. A palmar syphilide, for instance, may appear in the fifth, sixth, or eighth year—a syphilide which, by its character, belongs to an earlier period of the disease. Experience shows that this lesion is obstinately resistant to iodide, while it may easily be cured by mercury. In this case, therefore, mercury should be given at a period when, according to the letter, but not the spirit, of the programme, mercury would appear to be contra-indicated.

A fortiori, the occurrence of a grave symptom in the course of treatment at any period will suspend strict adherence to the programme in question. In this case mercury or iodide must be prescribed according to the nature of the lesion, without regard to the stage of the disease, or the two remedies may often be combined.

Hence, in proposing the preceding therapeutic scheme for the treatment of syphilis, I do not present it as a fixed and

invariable plan of campaign, which can be rigorously determined in advance, nor as one which can be systematically applied to all cases, independently of the numerous and varied circumstances of practice. I do not, therefore, consider myself guilty of the "mathematical calculation" and "arbitrary strictness" with which I have been reproached, and which are so contrary to the medical spirit. I have only attempted to trace on broad lines the general management of the treatment of the disease.

In the management of antisyphilitic treatment there is one essential point which requires special mention. It is advantageous, in the first stages of treatment, to approximate as far as possible the stages of therapeutic activity. It is important, on the other hand, to separate them more and more in proportion to the age of the disease. Thus, at first, between the first two or three stages of treatment, intervals of not more than a few weeks should be intercalated; later on these intervals of rest may be increased to three or four months without fear of accidents. In a more advanced stage of the disease these periods may be from four to six months.

Lastly, I may add that time and experience will no doubt lead to improvements and modifications in the method. Already, for example, Neisser, having adopted this mode of treatment in principle, proposes to modify it by alternate energetic and mild courses of treatment. Others, again, such as Martineau, Lewentaner, and Hallopeau, have suggested the alternation of mercury with iodide in intermittent treatment either in the first or in the second year. "If it is demonstrated," says Hallopeau, "that mercury should not be administered continuously, is it therefore necessary to abstain from all treatment during the necessary interruptions of the mercurial treatment, and allow the disease to evolve without attacking it? I do not think so, for we have at hand another remedy of undoubted power. Therefore, let us prescribe iodide during the periods of rest of the mercurial treatment."

On the other hand, it has been questioned whether it would not be an advantage to return to mercury from time to time in the later stages of the disease.

The value of these modifications of the method which have been proposed remains to be seen.

Such, in my opinion, should be the treatment of syphilis, carried out by the method of successive courses. I have not based this method on theoretical considerations only, but have been led to it by empiricism, and have constructed it on the foundation of numerous observations and experiments many times revised and corrected.

I admit that this method is not perfect, and do not present it as such, but it appears to me impossible to deny its advantages, especially the four following:

1. It is more agreeable to patients than continued treatment, because it appears to them more rational, and because it causes them less fatigue.

2. It is more easily tolerated by the organism than continuous treatment.

3. It preserves the curative influence of mercury and iodide during the whole duration of their administration.

4. It allows these two remedies to be prolonged without inconvenience for an almost indefinite period, at least for the time necessary for cure.

No doubt this method has its failures, and I shall shortly mention them; but, on the whole, it constitutes the best treatment we have at the present moment—at any rate, in my opinion. I have had, as a rule, more satisfactory results by this method than by any other.

For more than thirty years I have treated in this way thousands of patients, both in hospital and in private, and, with certain exceptions, which I shall shortly mention, I can say that I have almost invariably seen this method realize what was required, either as regards actual curative effects, or, what is more essential, as a safeguard for the future. Of my private patients, the only ones I can speak of with regard to the latter point, I have been able to follow the state of health of a good number for ten, fifteen, twenty, or even twenty-five years after the original infection who have suffered from no further specific symptoms up to the present time. I know many, either professionally or personally, who have become the fathers of healthy

children. Whether they are absolutely cured I cannot say, but the treatment has rendered their syphilis mild in the past, quiescent in the present and probably in the future, and harmless to their family.

This is the usual result obtained by the method in question, but unfortunately there are exceptions. These exceptions are certainly rare, but none the less authentic and deplorable. There are cases in which this method fails, like all others. These cases are of two kinds—the one which, for want of a better term, I may call refractory syphilis; the other constituted by syphilis with parasyphilitic symptoms.

1. Refractory syphilis has a particular malignancy, which manifests itself by grave and constantly recurring symptoms, in spite of all treatment. Each attack is severe, and requires energetic treatment to subdue it. But no sooner is one attack cured than another appears, in spite of correct treatment; and a third after the second is cured, and so on for years. A case of this kind is now under my care—a woman who contracted syphilis thirteen years ago, and has always been well treated by energetic medication. In spite of this, she has for thirteen years been subject to numerous attacks, sometimes subinvolutive, of grave tertiary syphilis. Quite recently she returned to hospital for the ninth time with a severe syphilide, which has destroyed part of the face.

2. There is another form of syphilis which acts very differently to specific medication. This is syphilis with parasyphilitic manifestations. At its origin it presents nothing special, and is often benign. Then, after a long time, it causes morbid lesions, the relation of which to syphilis was for a long time unrecognized, but is now undeniable. These lesions have not the physiognomy of syphilis, and are not, strictly speaking, of syphilitic *nature,* but are none the less of syphilitic *origin.* The principal lesions of this kind, for which I proposed the name *parasyphilis,* are tabes, general paralysis, tabo-paralysis, neurasthenia, neurasthenic headache, a special form of epilepsy, leucoplasia, and certain hereditary manifestations. Against lesions of this kind specific treatment is almost powerless, and when it occasionally succeeds, it is either in an indirect manner

or by very large doses given at the onset. In any case, the action is never comparable to that which it exerts on all other phenomena of the diathesis.

It is well to bear in mind these failures of specific treatment, for too much faith is put in the omnipotence of mercury and iodide in syphilis. To hear some of our colleagues speak, it would seem that everything of a syphilitic nature is amenable to antisyphilitic treatment and, reciprocally, that everything which resists this treatment is not syphilitic. This is a double error, of which those who see syphilis daily, and who know by experience that it is not infallibly curable, are aware.

On the other hand, the knowledge of these failures should incite us to further efforts and to seek other methods capable of doing better.

In tracing the plan of the intermittent method of treatment, I have been obliged to omit certain particular points, to which I must now return. There are three points which specially require attention:

1. The manifest advantage of commencing treatment by an energetic first course.

2. The necessity of maintaining treatment during each of the courses at a therapeutic level of intensity.

3. The appropriate mercurial preparations to use in the different stages of the disease.

1. I have no doubt that an energetic mercurial treatment, instituted in the first stages of syphilis, exerts a particularly powerful modifying action on the future of the disease. I have many times met with patients who, having taken only a single course of mercury at the beginning of infection, have been free from any sign of the disease for long periods, even up to twenty years and more. The twelve cases in the table on page 286 will serve as examples.

Here are twelve patients who, after being treated with mercury for a few weeks or months only after infection, acquired complete immunity for nine to thirty-four years, and only suffered from tertiarism at distant periods. This is a matter for reflection, and is instructive with regard to the special point we are considering. It cannot be said that expectation does

the same thing, for tertiary syphilis follows expectant treatment at much earlier dates, as is proved by some statistics which I have made on a certain number of syphilitics who had absolutely no treatment at all. The results of sixty-three of these cases are shown in the following table:

In the course of the	1st	year	.....	2
" "	2nd	"	.....	9
" "	3rd	"	.....	8
" "	4th	"	.....	7
" "	5th	"	.....	3
" "	6th	"	.....	6
" "	7th	"	.....	6
" "	8th	"	.....	4
" "	9th	"	.....	3
" "	10th	"	.....	5
" "	11th	"	.....	2
" "	13th	"	.....	1
" "	14th	"	.....	2
" "	15th	"	.....	1
" "	17th	"	.....	1
" "	19th	"	.....	1
" "	20th	"	.....	1
" "	21st	"	.....	1
				63

These figures show—(1) that tertiarism appeared fifty-three times in the course of the first ten years, and ten times later than this; (2) that the maximum period of tertiarism was between the second and fourth year (twenty-four out of sixty-three).

After this there can be no doubt that mercurial treatment, commenced at the beginning of the disease, has a powerful action in modifying the morbid evolution, by retarding the outbreak of severe lesions and postponing them to more or less remote periods.

I am of opinion that the first mercurial treatment at the very threshold of the disease should be particularly energetic, both as regards therapeutic intensity and duration. Therefore,

Primary Lesions.	Period of Immunity (Years).	Tertiary Lesions.
1. Indurated chancre. Roseola....	11	Tubercular syphilide.
Mercurial treatment from six to eight weeks at the beginning of infection.		
2. Indurated chancre. Roseola and mucous patches.	11	Hypertrophic gummatous syphilide of the lower lip.
Mercurial treatment for three months at the beginning of the disease.		
3. Indurated chancre.....	9	Gummatous perforation of soft palate.
Four months' treatment in the first stages—six weeks by mercury and ten weeks by iodide.		
4. Indurated chancre. No secondaries.	9	Subcutaneous gumma.
Treatment by sixty Ricord's pills in early stage of disease.		
During the ninth year one bottle of syrup of Gilbert.	23	Tibial exostosis. Sarcocele.
5. Indurated chancre. Roseola. Buccal syphilides.	13	Cerebral syphilis.
Three months mercury in the early stages.		
6. Indurated chancre. Benign secondaries.	10	Tubercular syphilide.
Treatment by mercury and iodide for five or six months.	36	Tuberculo-ulcerative syphilide. Phagedena.
7. Indurated chancre. Roseola....	15	Phagedenic tubercular syphilide.
Mercurial treatment for two months.	26	Ditto.
8. Indurated chancre. No secondaries.	24	Tuberculo-ulcerative syphilide.
Treatment by mercury and iodide for a few weeks.		
9. Indurated chancre.....	22	Tibial exostosis with multiple recurrences.
Treatment by mercury and iodide for a few weeks.		
10. Indurated chancre. No secondaries.	34	Ulcerative syphilide of scalp.
Four months' treatment by protoiodide pills.	35	Tuberculo-ulcerative syphilide. Phagedena.
11. Indurated chancre. No secondaries.	9	Gumma of palate.
	12	Tubercular syphilide.
Four months' treatment by mercury and iodide.	14	Gummatous infiltration of lower lip.
	18	Recurrence of labial lesion. Sclerosing glossitis. Ulcer of palate.
12. Indurated chancre. Several secondary lesions during first year.	31	Gummatous syphilides. Exostosis of fifth metacarpal.
Six months' mercurial treatment.		Subcutaneous gumma.

in the first course of treatment I prescribe mercury in full doses—that is to say, for an adult man ten centigrammes of protoiodide daily, or even more if the remedy is well borne. I prolong this treatment for six weeks at least, and for two months if possible. I then give the patient a rest for several weeks. Then I resume treatment on the same lines for six weeks. In this way I place on the threshold of the diathesis a course of treatment of at least three months, divided by a short interval. In other words, I attempt to realize a primary therapeutic effort which, by surprising the disease at its origin, appears to exercise upon it a particularly active and durable repression.

2. I regard it as of great importance that, in the different courses of treatment which compose the intermittent method, the mercury should be administered always in therapeutic doses—that is, in doses capable of exercising an efficacious action on the disease.

But this precept is continually infringed in practice. When syphilis is benign and quiescent it is naturally treated with small doses. Also, in cases of syphilis which were originally benign, and the first symptoms of which yielded to small doses of mercury, for the good reason that they would have disappeared spontaneously, this small dose is considered efficacious, because it was apparently successful at first, and is not increased. Then, in the following courses of treatment, this small dose, which is below that required for a curative effect, is continued. For example, protoiodide in a daily dose of five centigrammes is prescribed for a young and vigorous man, and, having been successful at first, is continued in the same dose during the rest of the treatment. But this dose of mercury is inefficient, as I have already pointed out, and it becomes still more inefficient owing to the effect of accustomance, whether administered in more frequent or more prolonged courses. In such doses mercurial treatment becomes an illusion, or a kind of disguised expectation. This practice of timid treatment results in two consequences, one of which is especially important.

The first is the possible development of a syphilitic outbreak

at a more or less early date, owing to insufficiency of therapeutic repression. This may, however, be beneficial to the patient if the physician knows how to profit by the warning.

The second consequence is more serious, and consists in the fact that a series of mercurial courses in small doses leads to a kind of *relative insensibility* of the organism to mercury, so that after a certain time the patient only reacts feebly to this remedy, even when administered in large doses. This is what is sometimes observed in practice: a patient has been treated for a long time with small doses; new symptoms arise, and are very likely to prove rebellious to the action of mercury. The reason of this is that the patient is, so to speak, blasé with long accustomance to mercury, and the action of the remedy is deadened.

As a matter of fact, the method by repeated courses of mercury is, of all methods, the most likely to cause this refractory state to mercury by accustomance, and it is easy to see what a deplorable result it may lead to when in each of the courses the mercury is below the active dose of the remedy. On the one hand, mercury is administered in a dose insufficient to have a serious influence on the disease; on the other hand, the action of the remedy is paralyzed in advance when it becomes necessary to prescribe larger doses. I am almost led to believe that a patient submitted to a numerous series of mercurial courses in feeble doses is further from cure than a patient who has only had a single mercurial treatment with energetic, or at any rate sufficient, doses.

In conclusion, I may say that if the method of successive treatments is accepted, it is essential that each of the therapeutic states which compose it should be a state of active mercurialization, capable of contributing its part to the whole work. The manner in which this result may be obtained is by always keeping the mercury in an efficient dose, in spite of the benign appearance or even the latent state of the disease. To diminish and almost abolish this dose, as is too often done, only ends in giving mercury to no purpose, and leaving the patient untreated, with the simulation of treatment.

3. Is there any advantage in varying the composition of the

mercury in the successive courses of treatment? For instance, is there any advantage, after having treated a patient by a series of courses of protoiodide, in treating him afterwards with sublimate, or by inunction or injections?

This is a delicate question which will have to wait some time for a definite solution. In a general way, however, I think I can answer in the affirmative. It is useful to vary the mercurial preparations, because certain mercurial preparations and certain methods of mercurialization are not endowed with an equal influence at all periods of the disease, nor on all its manifestations. Some are particularly active in certain lesions and less active in others; some act better in the early stages than in the later ones, and *vice versâ*.

For example, in the case of a patient at the beginning of the secondary period, affected with roseola, mucous patches, papular syphilides, acniform crusts on the scalp, general malaise, etc., I consider that these symptoms will be more rapidly and effectively relieved by protoiodide than by sublimate, syrup of Gibert, or even by inunctions or injections. Protoiodide is the remedy to use at the beginning of the disease. Its proper place is in the first stages of the disease, when it acts better than any other form of mercurialization, and better than at any other period of the disease.

On the contrary, in the case of an old syphilitic presenting tubercular and ulcerative syphilides, protoiodide is much less efficacious than sublimate or inunctions or injections. The reason of this I do not know. These are the results of clinical experience. They are facts which I can demonstrate but cannot explain.

What is true for protoiodide and sublimate is equally true for other mercurial preparations, and also for the different modes of administering mercury. One method of mercurialization often succeeds where another fails, and reciprocally. There are, therefore, certain adaptations or appropriations of remedies and methods to certain lesions and certain periods of the disease. From this results a practical point of much value in the general direction of the treatment of syphilis—that is, *in a series of mercurial courses, to try and adapt the choice of*

mercurial preparation, or the mode of mercurial administration, to the nature of the lesions to be attacked, and to the period of the disease.

For this reason, in my opinion, there is every advantage in commencing treatment with protoiodide and ending with sublimate or with mercurial inunctions. This result of clinical observation is due to assiduous and daily handling of these three agents—protoiodide, sublimate, and inunction. Very probably analogous differences may be found in the action of other antisyphilitic agents and other methods of mercurial administration. But these are at present not sufficiently proved by experience. I have mentioned some when dealing with the method of injections, especially the method of intensive injections, but many others no doubt remain to be discovered.

The study of the therapeutic *appropriations* to the different manifestations, forms, and periods of syphilis is a subject for further investigation.

CHAPTER XXVII

AUXILIARY MEDICATION

I HAVE finished with what constitutes the specific treatment, properly so called, but I have not yet finished with the general treatment of syphilis.

It is not sufficient for the treatment of a syphilitic to administer mercury and iodide, even by the best method. There are other things to be done, which are equally medical and equally worthy of our attention. It is necessary to look after the general health of the patient; to observe his temperament, constitution, and morbid tendencies; to pay attention to incidents of all kinds which may occur, and to satisfy indications of the most varied nature. Therefore, in many cases, auxiliary medication should be combined with specific treatment.

In certain nervous patients, especially women, these auxiliary medications are sometimes of great importance. They may even become the principal ones, and relegate mercurial treatment to the second place. Consequently, when we are called upon to treat a syphilitic patient, we must not think we have done everything when we have prescribed mercury and iodide, for this is only part of the whole treatment. The patient should be studied in a special way, as any other patient. The state of his functions and his general health require supervision as well as his syphilis. This is far more truly medical than to limit one's horizon to the symptoms of the disease.

In this spirit we should pay attention to the hygiene of our patients. We should inquire into the details of their mode of life, their diet, their occupations, the time they devote to exercise and sleep, etc. We should make them understand the necessity of a quiet and regular life, free from excesses of any

kind—a difficult thing to do among certain classes, such as the aristocratic, to say nothing of the demi-monde. We should prescribe a tonic diet, regular daily exercise, and sleep, etc.

In the same way we may prescribe different tonic medications—for instance, iron (which is much more efficacious in anæmia associated with syphilis than in anæmia of syphilitic origin), quinine, cod-liver oil, glycero-phosphates, cacodylates, etc.—stimulating baths, sulphur mineral waters (Uriage, Cauterets, Barèges, Luchon, Aix, etc.), hydrotherapy (an excellent tonic and regulator of the nervous functions), sea-baths, sea air or mountain air. These agents are, in many cases, indispensable auxiliaries to specific medication, and often contribute largely to the success which may follow our efforts.

Some of these points merit more special attention, and I shall consider them more fully before terminating this subject.

Diet.—The question of diet in the course of syphilis and antisyphilitic treatment has been subject to various opinions.

In the fifteenth and sixteenth centuries, at a time when the humoral ideas were in vogue, when substances of all kinds, both medicamentous and alimentary, were endowed with the most diverse and marvelous properties, much importance was naturally attached to diet in the cure of disease. Everything ingested by the digestive passages was held to modify in some way the composition of the humors. In this sense nothing was indifferent, and the slightest culinary ingredient was recommended or forbidden in the same way as the most active remedy. Syphilis thus had its special menu, adapted to its vicious humors—a menu to which entire pages were devoted in the writings of the period.[1] The patient was ordered to banish from his table all aliments of a nature to engender "cacochymie." He had to abstain from "all aliments of a hot or cold nature," from all aliments which were "salted, acid, acrid, bitter, humid, etc., liable to excite the blood, the mucus, or the bile." He was to abstain from beef, veal, mutton, pork, hare, and venison, which caused "obstructions in the liver"; from game, which rendered the blood "impure and effervescent"; from fish of all kinds, "with the exception of small red fish

[1] *Vide* Jean Almenar, Jean de Vigo, Jacques de Bethencourt, Fracastor, etc.

cooked on the grill." He was restricted in the matter of vegetables and fruit, which "determined intestinal putrefaction"; in the matter of eggs, cheese, and milk, which "irritated the kidneys and liver"; in the matter of wine, which "thickened the blood and irritated the hepatic gland and the nerves," etc. White wine only was allowed, because "it supported the stomach without causing congestion of the brain." Even water was forbidden by some. It must have been difficult for the unfortunate patient to obtain sufficient to eat after satisfying all these requirements!

At another period the doctrine prevailed which consisted in starving the patient under the pretext of weakening the germs of corruption by diet. Without descending to the extreme absurdities of inanition, the unfortunate syphilitics were condemned to be deprived of substantial food of all kinds—fat, fish, eggs, alcohol, wine, soup, and milk, etc. They were only allowed bread, skimmed milk, farinaceous food, vegetables, prunes, raisins, pears, apples, oranges, and figs. According to Boerhaave, it was necessary to "render the body thin in order to chase the virus from the humors; and even if the patient became as thin as a skeleton, and regained his embonpoint, it was a sign that the virus had again insinuated itself into the blood." And he adds: "I have seen a man affected with this disease who was persuaded to eat only turnips, and to drink nothing but water; he was completely cured." [1] At other periods a rich and substantial diet containing much meat was prescribed for syphilitics, "to prevent anæmia, deglobulization, and denutrition, which are the usual effects of the disease."

All these ideas have now no more than an historic interest. Good sense and experience have abolished them, and every one now agrees that there are no aliments which are particularly favorable or unfavorable for syphilis; also that the syphilitic requires nourishing like every one else, and that he only requires special nourishment at certain times and in certain possible eventualities of the disease. Nowadays the rules of diet in syphilis are simple, and may be summed up as follows:

[1] Boerhaave, "Traité du Mal Vénérien," 1753.

1. If the usual diet of the patient is good, it requires no change.

2. If it is insufficient or defective, it requires suitable modification.

3. If it is excessive, it requires reducing to an hygienic level.

All errors and irregularities of diet should be forbidden, such as excess at table, and especially alcoholic excess. Alcohol is the born enemy of syphilis, and constitutes a serious factor, both in a general way and in relation to certain special lesions, such as the dermatoses and manifestations of the nervous system.

Coffee in moderate doses may be allowed, or even prescribed, sometimes as a stimulant in cases of asthenic syphilis. As regards liquors, they may be allowed if they are not abused.

On the other hand, in the course of mercurial treatment, all foods and drinks which are liable to cause diarrhœa must be forbidden, such as excess of fruit, iced drinks, etc. The same with any food or drink which, owing to the idiosyncrasy of the patient, may be prejudicial to the gastro-intestinal functions.

Hygiene.—This may be summed up in the avoidance of excess of any kind.

An organ which is stimulated or overworked in a syphilitic is an organ which is menaced by syphilis, for stimulation tends to direct the disease to this organ. It is certain that a number of specific manifestations would not occur if they were not incited in this way. For example, venereal excess and neglect render vulvar syphilides severe in common prostitutes. The irritation of tobacco multiplies buccal syphilides, and renders them chronic, and tertiary glossitis is common in men and rare in women for this reason. Excessive physical fatigue may direct syphilis to the spinal cord. Cerebral syphilis is especially common after nervous and intellectual overwork, and still more so after excitement, late hours, and dissipation, the excitement of play, venereal excesses, etc. I have seen many personalities of Parisian high life end with cerebral syphilis, and I am of opinion that, out of ten cases of cerebral syphilis, there are five at least which would not have developed if the

action of the diathesis had not been directed to the brain by excessive stimulation of this organ.

Therefore the hygiene of the syphilitic consists chiefly, if not exclusively, in avoiding organic stimulations liable to attract the diathesis toward any particular system.

Moral Hygiene.—A few words may be added on what may be called the moral hygiene of syphilitics. An old adage recommended syphilitics "to avoid sad passions." This is wise, for every one knows that sad passions react on the general health, and bad health often means bad syphilis. But as syphilitics cannot control the events of the world, and have not always the opportunity of avoiding those who sadden them, the advice is most often platonic.

On the other hand, as Diday remarked, "of all the anguishes, it is often the syphilitic anguish which lies heaviest on the syphilitic." There are, in fact, certain patients on whom syphilis has a very serious moral effect, owing to the anxiety and grief which it inflicts. Sometimes they are in despair and literally overwhelmed. These patients believe their health is for ever ruined; they see themselves exposed in the future to a multitude of grave symptoms, especially of the brain and spinal cord; they regard themselves as debarred from marriage, or, if they marry, "it will be to beget scrofulous, rickety, cacochymic, and rotten children." It is obvious that this moral state is liable to react on the physical state, and indirectly on the disease, by causing want of appetite, digestive troubles, nervous depression, and diminution in vital force.

These afflicted victims of syphilis are divided into two classes—the communicative and the silent. The former are those who go from one doctor to another relating their woes. The latter hold their tongues and nurse their grief. In either case the physician can play the part of the comforter by offering, not common, but medical consolation; by representing to them the actual situation as it is, and not as they imagine it to be; by telling them that syphilis, like many other diseases, may be cured if it is properly attended to and treated; that, when treated, it leaves its victims alone; that it allows of marriage after a certain time of necessary depuration; that it even

allows the hope of a healthy posterity. Words of this kind, which are only the expression of the absolute truth, act on these patients as a more efficacious and revivifying tonic than all the remedies in the world.

Prophylaxis of Nervous Predisposition

There still remains a complement to be added to all that has preceded. This is of great importance, but only concerns a certain class of patients who are more especially predisposed than others to the nervous eventualities of tertiarism.

The nervous predispositions of patients, either hereditary or acquired, should be restrained and modified as far as possible for two reasons: (1) Because the most common and at the same time the most grave dangers of syphilis are connected with nervous manifestations; (2) because these nervous manifestations attack by preference subjects who are predisposed by hereditary or acquired erethism of the nervous system. In fact, the active principle of syphilis, whether virus, microbe, or toxin, constitutes a veritable *poison to the nervous system.*

This is the result of statistics which I have collected to compare the relative frequency of all the tertiary lesions which I have observed during my medical career.[1] Out of 3,429 cases of this kind, I found no less than 1,085 in which the nervous system was affected in different ways—cerebral syphilis, spinal syphilis, monoplegias, partial paralysis, tabes, general paralysis, etc. It is noteworthy that this figure far exceeds that of the cutaneous manifestations (787), which were formerly considered to be the most common expression of tertiarism. We may, therefore, conclude that, *of all the organic systems, it is the nervous system which, without possible contradiction, is the most often affected by tertiary syphilis;* it is the nervous system which pays the heaviest tribute to tertiarism.

The subjects who are predisposed to tertiary syphilis of the nervous system are of two kinds—those who have a hereditary predisposition, or who come of a neuropathic stock, and those

[1] International Congress of Dermatology and Syphilography, 1889.

who are predisposed by nervous overwork. I pointed this out long ago in the case of cerebral syphilis and tabes,[1] and it is equally well established for general paralysis. Probably also this etiology is common to most of the specific manifestations of the nervous system.

Hereditary or acquired neurasthenia is certainly one of the *localizing causes* of syphilis, and is one cause which directs syphilis toward the brain. There are certainly subjects whom we may regard as specially liable to syphilis of the nervous system in the future, if they contract the disease. Many of us have made prophecies of this kind which have been confirmed by future events. As an example, I will mention the case of a medical man who contracted syphilis professionally. He was not only a hard worker and investigator, but he was one of those whose brain is always active and in a state of high tension. He said to me many times: "You will see that my syphilis will some day affect my brain, and it will be by the brain, thanks, to it, that I shall finish." His prophecy was realized in every point.

Does the usual treatment of syphilis, as we see it commonly carried out, take sufficient account of the dangers to which the nervous system is especially exposed by syphilis?

Suppose, for instance, that two patients are treated for syphilis. One of them is a nervous subject, and predisposed to all the miseries of neurasthenia; the other, on the contrary, is free from all nervous predisposition. Will the prescription given to the first differ appreciably from that given to the second? Not as a rule, at any rate. I regard this uniformity as bad practice. To treat in the same way two patients so differently menaced by the disease is absurd in principle and disastrous in results. Are there no special indications to fullfil in the case of the one who, by his acquired or innate tendency, we have reason to believe is probably exposed to special dangers in the future? Is there nothing more to be done than give him the usual prescription for protoiodide, syrup of Gibert, or iodide of postassium? I do not believe so, and good sense tells

[1] *Vide* A. Fournier, "Syphilis of the Brain," 1879; "Locomotor Ataxy of Syphilitic Origin," 1882.

me that a therapeutic effort of a special kind should be made on behalf of this patient. But how is this effort to be understood, and in what way is it to be carried out?

In the first place, it is manifest that this patient requires a special hygiene—namely, that which will be prescribed for him later on, but too late to be of any service, when his nervous system is already attacked by syphilis. From the beginning of the disease he should avoid as far as he can all possible causes of morbid stimulation of the nervous system, such as excesses of all kinds, and especially venereal excesses, intellectual work requiring continuous mental strain, excess at table and alcoholic excess, fatigue, late hours and excitement, excessive emotion or business worry, even too violent bodily exercise, on account of the congestion of the brain and spinal cord which may be caused by excessive fatigue. In connection with this last point, I remember the case of one of my patients who was attacked by specific myelitis after cycling from Paris to Amiens and back.

In the second place, are there any remedies which are useful in this respect? I cannot yet answer this question. Empirically, the field is open to all experiments; rationally, it is to the agents which modify the nervous system that attention should be paid. The bromides and all other agents of the same kind may be found useful, especially in certain subjects in whom nervous erethism predominates. To determine from time to time a sedative action on the nervous system may render this system less prone to suffer from the effects of syphilis, but this subject remains to be studied.

In any case, hydrotherapy is indicated in cases of this kind, on account of its tonic and regulating action on the nervous functions. I regard its preventive action as equal to its curative effect in the treatment of affections of the nervous system. I am therefore in the habit of prescribing hydrotherapy systematically to all syphilitic subjects who, by their hereditary predisposition or their personal tendencies, lead me to regard them as predisposed to the direct or indirect nervous manifestations of syphilis. I prescribe it not only during the course of specific treatment, but also for many years after treatment,

and recommend it to patients as an indefinite and habitual practice.

What results may be obtained from preventive treatment instituted on these lines, I cannot tell. The future alone will throw light on this subject. In any case, it is incumbent upon us to make some effort with a view to *preventive intervention,* the outlines of which I have just sketched, especially as the results of curative treatment are far from satisfactory. Let us examine these results, even with energetic and intensive medication, and in the hands of those who are accustomed to the management of mercury and iodide.

1. In *cerebral syphilis,* by the side of sometimes marvelous results are semi-failures or complete failures, infinitely more numerous than the cases of cure.

2. In *spinal syphilis* the proportion of failures is incomparably greater than that of the successes.

3. With regard to *tabes,* there are a few very rare cures, which are even hardly accepted by some on account of their exceptional character. These cures have always been in cases where the disease was attacked at its embryonic period. In more advanced cases there is possibility of arresting the disease, but not of curing it, and in confirmed ataxia treatment is impotent.

4. In *general paralysis,* which is commonly of syphilitic origin, there is, in my experience, failure of treatment in every case.

This is a deplorable result in the case of a disease which is apparently early influenced by two great remedies—two remedies which have not their equals in the whole of therapeutics! It would almost appear that we should place less faith in these two remedies and seek safety in other ways. I know well that specific treatment remains, and always will remain, the best safeguard to protect our patients against the eventualities of the future which may affect their nervous system, as well as any other system, and I am far from proposing to renounce it. I am a fervent admirer of mercury and iodide, and it is needless to state my faith on this point again after what has preceded. But I cannot avoid recognizing that these two useful and

admirable remedies are far from possessing, against the nervous affections of syphilis, that infallible action which is accorded to them by certain physicians who are less accustomed than ourselves to use them, and consequently less in a position to appreciate their defects.

Having more than once experienced these defects, I have begun to consider whether something more than the usual practice cannot be done to prevent the nervous dangers of tertiary syphilis, especially in subjects who, either by heredity or by acquired tendencies, are more predisposed than others. I have begun to consider whether, along with, or consecutive to, the specific treatment, some other *antinervous* treatment cannot be instituted, either by hygiene, hydrotherapy, or possibly some other remedies.

At any rate, it will be agreed that such an indication is rational, and that is all the appreciation I can expect for it at present. Some attempts in this direction have appeared to me worthy of attention, but I will abstain from citing facts which are too recent and too few to carry much weight. I affirm nothing, and am not in a position to affirm anything; I simply seek and hope, which is quite a different matter.

CHAPTER XXVIII

CONCLUSION

Let us suppose that the long therapeutic programme which precedes has been punctually followed and religiously observed by a patient who is confided to our care. What remains to be said to this patient when he pays us his last visit, and asks the inevitable questions: "Am I henceforth rid of syphilis? Am I at last free? Do you think I am cured, radically cured?"

In such a case we should answer what we think, and what experience gives us the right to think or to hope. But what we think is that our patient, after treatment by the thorough method which we have specified, has every chance of being free from his disease in the present, and of being no longer subject to fresh symptoms in the future. This we are morally authorized to say.

But what we also think is that, in spite of all our efforts, in spite of the long and active treatment, it is not impossible that this patient may be liable, in the more or less remote future, to some syphilitic or parasyphilitic manifestation. For, unfortunately, there is no sign which allows us, in the case of syphilis, to affirm a cure. As Ricord has well said, "neither the dose, nor the pharmaceutical preparation, nor the duration of treatment, confer immunity with certainty, or guarantee the complete and radical extinction of syphilis," and it is necessary to tell this to our patients.

In the case of a phthisical or cancerous patient who has already one foot in the grave, we give promises of health and cure! That is a justifiable falsehood, a consolation which, in our impotence, we owe to the unfortunate patient, and which it would be cruel to refuse. But in the case of a subject full

of health, who enjoys all his faculties, and whom we have almost the right to regard as free of his disease, we must only speak the truth, and the whole truth.

This is all the more necessary for the following reason: Supposing that, in spite of our efforts, a fresh sign of the disease appears ten, twenty, or even forty years after the beginning of infection. This may awake no remembrance in the mind of the patient of an affection long since forgotten. It may also happen that his medical attendant, not being aware of the syphilitic antecedents of his patient, will fail to recognize the specific nature of the symptoms, especially as the signs of the disease at an advanced period have no resemblance to venereal disease. There may be, for example, a visceral lesion, a laryngeal or pulmonary affection, hemiplegia or paralysis, sclerosis of the spinal cord, amaurosis, cirrhosis, nephritis, etc. But in the eyes of the man of the world, what connection have such apparently common symptoms with the sins of his youth, which he believes to have been expiated long ago? What need is there to make a complete confession to his physician by unearthing compromising remembrances? The result is that the patient is silent, or even dissimulates his special antecedents, and the physician runs a great risk of not recognizing the nature of the disease.

And what is the final result? It is that, being untreated by the only medication which is of any use, this affection persists and follows its normal evolution, and may lead to a grave or fatal termination, while it might have been cured had it been attributed to its true origin and submitted to specific treatment.

We may regard it as certain that a number of tertiary syphilitics are condemned to incurable infirmities, or even to death, by the single fact that a lesion appearing late in the disease has been unrecognized and not treated as it ought to have been. It is against possible eventualities of this kind that it behooves us to warn our patients. It is by reason of the possibility of tertiary manifestations appearing at a remote period that it is of the greatest importance to instruct our patients fully and sincerely as to the true situation, at a time when, judging their treatment as complete and sufficient, we take leave of them.

At this last interview, when our patients pose the inevitable and perilous question, "Am I cured?" we should never neglect to express our undisguised opinion, and give the following salutary and essential advice:

"Yes, I believe you are cured, as far as I have a right to believe so scientifically. But, whatever may occur in the future, whatever disorder may affect your health, remember your former complaint. Never neglect to inform your physician of your special antecedents. Tell him plainly, tell him ten times rather than once, that you have had syphilis. It is quite possible that this information may be of no value to him, but it is not impossible that circumstances may occur in which this information may be of capital importance both to him and to you, and on the confession of your antecedents may depend your chance of cure, or even your life."

PART II

THE PROPHYLAXIS OF SYPHILIS

THE PROPHYLAXIS OF SYPHILIS

CHAPTER XXIX

THE PUBLIC PREVENTION OF SYPHILIS

In the course of a discussion on the depopulation of France, the Academy of Medicine, impressed by the terrible mortality among heredo-syphilitic infants, and the notorious inefficiency of administrative measures against syphilis, appointed a commission to investigate the reforms which might be introduced in the public prevention of this disease, and to prepare a report on this subject to be addressed to the authorities.

This commission, which was composed of MM. Ricord, Bergeron, Le Roy de Méricourt, Léon Lefort, Léon Colin, and Alfred Fournier (in 1887), devoted many meetings and long discussions to the study of the many complex and difficult problems which constitute this vast subject. The results of these conferences are embodied in the following pages.

This commission prefaced their report by two major declarations justifying the urgent necessity for more complete and more efficacious preventive measures than those actually in force. Of these two declarations, one concerned the real dangers of syphilis, the other dealt with the fatal prejudice which has often cooled the zeal of public bodies with regard to the prophylaxis of syphilis, according to which this disease only constitutes a danger to those who expose themselves to it.

The Manifold Dangers of Syphilis

Syphilis may be called the *modern plague,* and constitutes a grave and permanent danger to the public health. Syphilis, in fact, is not what it is generally represented to be—a transient

complaint, limited to certain external affections, and curable by treatment of short duration. In reality it is quite another thing. It is a stable and permanent affection, prolific in manifestations of all kinds, some mild, others more serious, and some (more numerous than is generally supposed) even fatal. It is a diathesis which lays hold of the whole body, which it may affect in all its parts and all its organs, and which is only reduced to quiescence by very prolonged treatment, which very few patients carry out. In reality it is a disastrous and pernicious disease, owing to the numerous dangers attached to it, individual, hereditary, and social.

Individual Danger.—These not uncommonly appear at more or less remote periods, as much as ten, twenty, or thirty years after the first infection, and were long ago supposed to be fully known. But the investigations of contemporary science have singularly enlarged the circle and widened the door. The more syphilis is studied clinically and anatomically, the further do the limits of its pathological domain extend by a series of unexpected annexations. It is thus that a number of cerebral, spinal, ocular, articular, laryngeal, pulmonary, hepatic, renal, cardiac, vascular, and other affections, which were formerly regarded as of unknown origin, have been connected with syphilis as further manifestations of this remarkably polymorphous diathesis. To only mention one example—cerebral syphilis, which was hardly spoken of thirty years ago, and which an eminent pathologist of that period only consented to accept as a "conjectural appendix to the classical form of the disease," has nowadays become a common affection of current observation. The appendix has become the principal part, and the conjecture reality. A great number of syphilitics die from cerebral syphilis. This is an actual fact, which is neither contestable nor contested.

Hereditary Dangers.—More disastrous still are the hereditary consequences of the disease. The mortality among the progeny of syphilitic subjects is enormous. This mortality, according to recent statistics concerning maternal heredity—the most grave form—is estimated at seventy-one per cent. of the number of pregnancies; and this figure in certain hospital

statistics rises to eighty-four or eighty-six per cent. This shows the part played by syphilis in infantile mortality.

And this is not all; for it is known that the heredo-syphilitic influence may be prolonged beyond the first infancy, and cause grave affections in adolescence or adult life, which may have a fatal termination. We know now that a number of lesions hitherto vaguely attributed to scrofula are in reality the manifestations of late hereditary syphilis.

Social Dangers.—As to the *social* consequences of the disease, the principal ones may be summed up as follows: Divers infirmities may result from numerous lesions, and end in incapacity for work, and misery; public expense for the maintenance of hospitals (in Paris four special hospitals for venereal diseases are insufficient); permanent incapacity in the army of a considerable number of men on active service; innumerable contaminations spread among the populace; dangers connected with marriage; introduction of syphilis into the family circle, with separation, divorce, and all the social calamities derived from them; frequent contamination of wet-nurses, sterile marriages, or, what is still worse, corruption and degeneration of the race; finally, polymortality of the young, causing depopulation.

For these reasons syphilis is a grave disease, much more grave than it is generally represented. It is a disease which is dangerous to the public health, and, with tuberculosis and alcohol, forms one of what may be called the three social evils of the present day. Moreover, physicians and hygienists have long ago raised the cry of alarm, pointing it out to the public authorities as a plague which it is to the general interest to repress as energetically as possible. It is fifty years ago since Duchâtelet wrote: "Of all diseases which affect the human species, there is none more grave or more dangerous than syphilis. I have no hesitation in saying that the disasters which follow it surpass the ravages of all the plagues which from time to time have struck terror into society." Michel Levy also wrote: "The extirpation of this leprosy of our time, which is called syphilis, is not beyond the powers of the State. Sequestration and leper hospitals were successful with ancient leprosy;

the plague is the object of a vast and expensive preventive apparatus; all governments make sacrifices to destroy the germs of small-pox; but syphilis does more harm than all these put together. It deteriorates generations; it is more contagious than the plague. Why, then, are not the same means of extinction employed in all countries? Such is human nature; the thunder of unexpected epidemics which pass over its head strikes it with terror, like a flash of lightning; while it becomes familiar with slow and continuous plagues which it carries in its bosom."

A fortiori, what would these two great hygienists say to-day with a more complete knowledge of all the possible consequences of the disease?

Merited and Unmerited Syphilis.—Another point to be considered is the prejudice which has always injured the cause of the public prophylaxis of syphilis. This prophylaxis has been regarded as of little value, because it is represented as exclusively intended to protect people who could equally well protect themselves; and it has even been considered as encouraging debauch by the security which it offers. It has been said that the contagion of syphilis is not like that of small-pox, measles, typhoid, diptheria, etc., and that syphilis does not attack those who do not expose themselves to it in the usual way. Therefore, it is argued, what is the value of administrative and police regulation, which always interferes more or less with individual liberty, which is difficult in application, expensive, and sometimes not appreciated by those whom it aims at protecting? Of what value are such rules in effecting what could be better done by personal observance?

In the eyes of men of the world syphilis is, so to speak, a *merited* disease. Certain persons even regard it less as the effect of an isolated contagion than as the result of a series of contagions resulting from a life of debauch.

All this is erroneous. In fact, syphilis is contagious in the same way as all other contagious diseases. Like these, it results, not from several accumulated contagions, but from one only. It is not uncommon to meet with unfortunate young men, sometimes almost children, who have contracted the

disease at their first false step, at the first satisfaction accorded to the awakening of the passions. Hence syphilis is far from being the equivalent of a certificate of debauch; it only signifies an unfortunate contagion.

On the other hand, if *merited* syphilis exists in the strict, but hardly charitable, sense of the word, and even if it constitutes the most common group of cases, it is no less just to recognize that there are numbers of cases of quite a different character, derived from licit contagion, and, if we may use the words, moral, honest, or purely accidental.

For example, are the numerous cases of syphilis *merited* which married and honest women contract from their husbands, whether the husband, being syphilized before marriage, has married too soon, or whether he has contracted the disease after marriage?

Are those cases *merited* where nurses contract syphilis from sucklings, to transmit it to their own children, to their husbands, or to other sucklings? Are those cases *merited* in which sucklings contract syphilis from nurses? Are those cases *merited* where an infinite number of infants are infected during birth, and frequently succumb? Are cases of syphilis of non-venereal origin *merited*—for example, those which result from vaccination, those which occur among medical men, students, and midwives, in the practice of their profession, those which result from accidental contact, etc.?

But to shun the prophylaxis of syphilis on the pretext that this prophylaxis only serves to safeguard those who have a simpler means of protecting themselves, and profits them only, is to commit an error in hygiene, and to oppose all knowledge acquired with regard to the propagation and dissemination of the disease. In fact, all cases of syphilis, whether merited or unmerited, are equally responsible, and the latter are the offspring of the former. Clinical experience shows us daily that syphilis rebounds from the lowest den to the most honest household. The contamination of the honest wife and the infant are often only the result of the syphilis of a prostitute. Consequently, to stamp out the syphilis of the prostitute is to protect *ipso facto* the honest woman and the child.

Moreover, why these distinctions? Is not syphilis grave enough, and does it not cause sufficient harm to society, for society to have the right, or rather the duty, to defend itself against it, without paying attention to the possible differences in origin of such a formidable scourge? Is it not to the public interest that such a scourge should be suppressed by general measures, capable of attacking all the sources from which it is derived?

The Academy of Medicine, taking into consideration, on the one hand, the excessive frequency of syphilis among the population, and, on the other hand, the manifest inadequacy of the present system of antisyphilitic prophylaxis, has sought to inquire how this system may be modified, amended, and extended, so as to safeguard more efficiently the public health. From the inquiry instituted on this point, it results that certain reforms might be introduced in the system in question.

The questions relating to the prophylaxis of syphilis are so numerous and so diverse that some form of classification is necessary at the outset, in order to avoid wandering from the subject or making omissions. These questions may be divided into three principal divisions, for, after careful consideration, there are only three ways of attacking syphilis:

1. It may be attacked by administrative measures and police supervision, with the object of preventing solicitation in the public streets, of submitting prostitutes to *registration,* and of supervising establishments which, disguised under the name of wine shops, are in reality only free houses of prostitution.

2. It may be attacked by treatment, by hospitalization—that is, by destroying the germs of contagion.

3. Last, and not least, it may be attacked by giving better instruction than has hitherto been done to the rising generation of medical men in all that concerns the symptoms of the disease—its divers forms, its social dangers, and its treatment.

In different degrees these three measures may co-operate to attain the desired result—the diminution in the frequency of the disease and the attenuation of its dangers.

Measures of Administrative Prophylaxis

The following principles form the basis of a public prophylaxis of syphilis:

1. That prostitution creates a public danger, by the venereal contagion which it spreads among the population.

2. That it is indispensable, from the point of view of both hygiene and morality, that prostitution should be supervised, and, if possible, suppressed by the public authorities.

3. That the system of free and non-supervised prostitution is disastrous to the public health.

4. That public solicitation, which forms the only external sign by which prostitution can be legally attacked, should be suppressed in all its forms.

Public Solicitation.—This not only constitutes a public scandal and an example of demoralization, but a danger, on account of the incalculable number of contaminations which are due to it. This solicitation is a permanent invitation to debauch, and consequently a prolific source of contagion of all kinds, especially syphilitic contagion. No statistics are required to support this statement, for it is self-evident.

Solicitation creates temptation, with what follows. It is true that it has existed, and will exist, for all time, but we must shut our eyes to the evidence not to recognize that it has nowadays attained a greater development than formerly existed. It must also be added that it has multiplied of late under different masks and under forms which are all the more dangerous in being more refined in appearance.

Every one knows what street solicitation has become in Paris during the last few years. It is needless to depict the aspect of our boulevards from eight o'clock in the evening till midnight or one o'clock in the morning, as also that of the neighboring streets, which, owing to their darkness, lend themselves to solicitation of a more open character. The women literally swarm in these quarters.

These things are matters of notoriety, but the following three forms of solicitation are less well known and especially dangerous:

1. That which occurs around *colleges and schools.* Veritable agencies for women are organized around these establishments, and have a special clientele among the students, whom they wait for at the hours of entry and exit, and with whom they sometimes communicate at the paternal domicile. I saw some years ago one of these letters, which was shown me by the father of a student who had yielded to temptation, and who had been punished in an unfortunate and premature manner. It appeared, according to this young man, that nearly all the pupils of his class had received a letter from the same woman, and that several had fallen victims to the same contagion.

2. Solicitation by *women's bars* merit special notice. Unknown some years ago, these establishments have become the plague of the present day. They abound in quarters where there is a chance of recruiting a clientele of young men. There were one hundred and eighty-one in Paris in 1882, and they have multiplied considerably since then. What goes on in these establishments is well known; but what is not so well known is that they are responsible for a number of syphilitic contagions. And this is not to be wondered at, for these houses are only disguised brothels, in which the prostitutes are free and not under supervision.

The special danger of these houses lies in the fact that solicitation occurs under the disguise of an honest sign, sometimes even where one would not expect to find it. And as the solicitation is carried on by free women not under medical supervision, it follows that these houses are infinitely more dangerous than the public brothels. As M. Le Roy de Méricourt has said: "The old public brothel had at least an honest sign. One knew when one crossed the threshold what to expect. Also, they were seldom visited except at night under the shelter of a friendly shadow. To-day customs have changed, and brothels are opened under the sign of bars; they are visited openly and in broad daylight; and why should one dissemble? Is it not a bar? And since when is it forbidden to quench one's thirst? These bars are the despair of families, because their sons find in these houses the three plagues of modern society: loafing,

alcoholism, and syphilis. Morally and physically, these women's bars are sinks of iniquity."[1]

3. *Solicitation in Wine Shops.*—This is even more dangerous than the preceding, because it appeals to a larger public, especially to the working classes and the army.

At the hospital it is common to hear patients say that they owe contagion to a girl whom they met at a wine shop, and with whom they had connection either in a neighboring lodging-house, or in a back room of the wine shop itself. It is the same with the army, and many young soldiers are infected with syphilis by women met with in the wine shops. M. Colin remarks: "For the army, the wine shops have been substituted for the brothels. In the quarters near the barracks a number of wine shops are converted into brothels, and it is in these that our soldiers become infected."

From information obtained from thirty-two soldiers who were able to locate the origin of their infection, it was found that in more than half syphilis was contracted from women in the wine shops. Also, of these thirty-two cases of syphilis, five were contracted in the same house, and from five different women.

Thus, the bars and the wine shops constitute at the present day actual centers of infection, and one of the most dangerous forms of clandestine prostitution. For the women they are centers of demoralization, alcoholism, and disease. These women are recruited from those who are out of work, from nurses and domestic servants out of employment, etc. It is in these houses that many young women are stranded who come to Paris from the provinces in search of employment. In the second place, what becomes of these women when they have been hired by the proprietors of these establishments? To gain a livelihood, to decoy clients, they drink day and night, and rapidly end in alcoholism. To satisfy the proprietors, they must sacrifice their flesh, and as a necessary consequence, they end with syphilis. In a word, they enter these houses as honest women, and go out fallen, alcoholized, and syphilitic.

[1] *Vide* a remarkable work on this subject by MM. Barthélemy and Deville "Syphilis and Alcohol," 1882.

Two examples will show the dangers to which these houses expose both their personnel and their clients.

A young girl of fifteen, almost a child in size and development, was affected with confluent vulvar syphilides and other syphilitic lesions. When questioned as to the origin of her disease, she told the following story: Coming to Paris from the provinces to seek employment, she was first placed as a nursemaid in several houses, from which she was soon dismissed because she was "good for nothing." Finally, she was sent to the proprietor of a wine shop, who hired her immediately, telling her that he "would only give her fifty centimes a day for wages, but she might earn much more." At the time she did not comprehend his meaning, but at night she understood, for "she had received five men in the day and had earned five francs." At this rate she could not be long in contracting some venereal disease; and, as a matter of fact, six weeks afterwards she was affected with syphilis, which she distributed forthwith.

Another example is that of a woman of twenty-eight, admitted to the St. Louis Hospital for secondary syphilis, with unusually confluent and exuberant vulvar condylomata of five months' duration. This woman had received no treatment, and came to the hospital on account of the pain she suffered. She gave the following history: She came to Paris to enter domestic service, and was sent by a registry office to a wine shop on the outer boulevards, where she was promised twenty-five francs a month as wages. For several weeks she did nothing but serve the customers; but then her employer, having signified that if she confined herself to this he would reduce her wages to pay for her board, she decided "to do as the other women of the establishment." As might be expected, she was soon contaminated, but did not give up her trade on this account. So that for more than five months, although affected with vulvar condylomata, she continued to receive from two to five men daily, without omitting a single day. If we reckon a minimum of two connections daily, this means that in five months this woman may have infected three hundred men!

A single woman is thus sufficient to spread several hundred

contagions in the population of Paris; and this occurs in a capital where prostitution is supposed to be regulated! Yet cases of this kind abound.

Such are the dangers to which public solicitation exposes the public health; and this public solicitation, which is the source of so much contagion, should be considered as a misdemeanor. With this object the following resolutions were drawn up by the commission:

1. To call the attention of authorities to the developments of public solicitation during the last few years, and to claim energetic repression.

2. To include with street solicitation certain equally dangerous methods of public solicitation carried out in wine shops and bars.

3. To point out the solicitation which is carried on round schools and colleges, which results in inducing students to debauch.

4. To declare, in the name of public health and morality, that these different kinds of solicitation constitute a misdemeanor, which should be dealt with legally.

The question of the penalty does not concern us as physicians, and is a matter for the legislators, but it is our business to point out that protection of the public health requires the medical supervision of women who are known to be guilty of solicitation. This supervision should consist in periodical examination of these women, and confinement in hospital of those who are suffering from venereal disease, especially syphilis. Hence the two following propositions:

1. In the interest of public health, women recognized as guilty of public solicitation should be submitted to periodical medical examination.

2. Those women who are found by this examination to be affected with venereal disease, especially syphilis, should be confined to a special hospital.

Arbitrary Administration.—At first sight it may appear that this proposal is identical with the old system at present in practice, but in reality it differs in every point. In the old system everything is ruled by arbitrary administration, whereas

what we require as the basis of our system is a law which will define a crime and deal with it, like other crimes, at the courts of justice. In the old system it is the police who decide the inscription of a woman found guilty of solicitation. On the contrary, we claim that the inscription of a woman found guilty of solicitation should only be decided by a court of common law. Under the old system, when a woman is found to be affected by venereal disease, she is sent to *prison* in common with thieves and criminals of all kinds. What we desire is that this woman, who is only guilty of having contracted a venereal disease, should be treated as a patient and sent to a *hospital.* In the present state of affairs, it is the police who hold the high hand over prostitution, and intervene in all things concerning it. They report the offense to their agents; they decide the offense without cross-examination; they superintend the registration of the guilty woman; they inflict punishment for all breaches of rules; they send the woman to prison, and through the police surgeons they decide the question of disease and imprisonment.

But this discretional power is contrary to the spirit of equity, and this system is condemned by public opinion. It is condemned because it is arbitrary and unjust, and because it is not founded on a legal basis. In fact, we have arrived at a state of affairs in which the public power which is supposed to protect us against the evils of prostitution is reduced to impotence, and the principal cause of this impotence lies in the fact that the legal basis of the powers exercised by the police is now denounced, or is at least legally contestable.

Necessity for a Legal Basis.—To remedy this state of things, it is necessary that the repression of public solicitation should have a legal basis, and that if measures affecting the liberty of the subject, by arrest and sequestration of women found guilty of public solicitation, or affected with contagious disease, are necessary for social reasons, it is none the less indispensable that these measures should be precise and formulated by law. And this law should have the double result (1) of rendering legal what is not so at present; (2) of rendering indisputable the powers of police administration with regard

to the supervision and repression of prostitutes—that is to say, by legalizing the official authority which is now so defective.

Registration.—In the second place, all measures judged necessary for repression or coercion should be guided by common justice, and the registration of a woman guilty of solicitation in public should only be confirmed by a tribunal, and after cross-examination. It is needless to say that this would be a considerable reform in the system at present in vogue.

Inscription (which means the transformation of a free woman into one submitted to police supervision) is now decided in Paris by a commission composed of three members of the police administration, who receive the reports relating to the accused woman, interrogate her, and, on their own initiative, pronounce judgment without appeal, which brands this woman with infamy.

But such power of discretion conferred on two or three agents of an administration, whatever guarantee may be presented by their high position or their character, is an anomaly in our institutions, an offense against common rights, an illegality which is condemned by good sense and by the spirit of the times. It is superfluous to reproduce here the numerous and diverse arguments which have from time to time been opposed to this special jurisdiction, without, however, succeeding in overthrowing it. It is sufficient to draw public attention to the matter.

If the penalty of registration is to be legitimate in the interests of public health, it should only be according to the legal procedures of common law, giving the accused the opportunity of counsel's defense.

Medical Inspection.—It is also in the interest of public health that the penalty of registration should entail medical supervision. It has been objected that medical inspection is illegal and an official violation committed by society. It has even been said to constitute a permanent danger of syphilitic contamination for the women submitted to this examination. But after ample consideration of the vindication of individual liberty and the "inviolability of the human person," we persist in affirming the absolute right which society has to defend

itself against a certain class of women who make a trade of prostitution. It is almost universally believed by medical men and hygienists that prostitution and public solicitation constitute a considerable danger to the public health, and that consequently it is the duty of society to insist on a rigorous supervision of the unhealthy trade of prostitution, in the same way as other unhealthy trades, by rendering prostitutes incapable of causing harm when they have become dangerous.

For this purpose the measures actually in force, consisting in fortnightly visits to unattached women and weekly visits to women in brothels, is insufficient, and should be replaced by the following rules:

1. The registered women, attached or unattached, should be uniformly submitted to a weekly visit at a fixed date; also a supplementary surprise visit, which should be made monthly by a medical inspector.

2. Each of these visits should be complete, and be directed chiefly to examination of the genital organs and the mouth.

It is unnecessary to enlarge on the advantages of these new proposals. It is obvious that security is strictly proportional to the number of visits; that visits on fixed days do not allow of the wide intervals which may be left between two monthly visits at undetermined dates; that the visits must be complete, in order to attain the desired object; lastly, that visits of medical inspectors at unknown times act as a control over the whole system.

The same system of supervision should be carried out in the provinces, where in many towns it has fallen into a state of neglect. In one town, for instance, examination of the women was made on a chair, and the women separated the labia with their own fingers! In another town women were not examined with the speculum, for the simple reason that "the town did not possess a speculum for the examination of prostitutes"!

Solicitation in the Streets.—With regard to the question whether solicitation in the public streets by registered women under medical inspection should or should not be tolerated, there are two propositions:

1. That all solicitation in the public streets should be absolutely forbidden. This proposition claims, therefore, the prohibition of what exists at the present time, and is tolerated by the regulations in force—namely, solicitation during certain hours by registered women.

2. That solicitation in the public streets must be submitted to because it is impossible to prevent; but that it should be regulated and rendered sanitary by only permitting it to women who are registered and under medical supervision.

According to the first system, all solicitation should be prohibited by women of all kinds for the following reasons:

(1) Because the public morality should be guarded as well as the public health, and solicitation of any kind constitutes a moral offense and a temptation to debauch.

(2) Because the regulation of prostitution should be based on general measures, and should not concern itself with partial measures dealing only with certain classes of prostitutes.

(3) Because it is impossible to make a distinction between women who are under supervision and those who are not.

(4) Because the liberty of solicitation conferred on women who are under supervision would constitute a kind of licensed prostitution, a kind of legal privilege accorded to a certain class of women, an official recognition allowed to these women by the administration. The administration cannot at the same time tolerate and repress street solicitation.

The partisans of the second system reply:

(1) That to attempt absolute prohibition of solicitation in the public streets—that is to say, the suppression of the tolerance which has long been allowed to a certain class of women—is nothing less than to introduce a complete revolution in the actual state of affairs, a revolution of uncertain result, or, rather, of certain failure.

(2) That to aim at the total disappearance of solicitation is to pursue an idea which it is impossible to realize, for the two following reasons: first, because prostitution has existed, and will exist, for all time; secondly, because prostitution requires solicitation in order to make a clientele—in other words, in order to live. Moreover, as Ricord has remarked, " solicitation

is not only in the streets; it is everywhere, in all stages of society, and in all its forms: at the theater, at the balls, in the cafés and casinos, at public meetings, even in the shop windows, where photographs of doubtful decency are exposed for sale. Solicitation will never be absolutely prevented under one or other of the thousand forms which it is capable of affecting. In my opinion, the only solicitation to repress is that which offends the morals. As long as there is no scandal, we can do nothing against solicitation, and no one will ever succeed in doing anything."

(3) That to tolerate solicitation on the part of a certain class of women under medical supervision is not, as has been said, to recognize an official privilege for these women; it is to submit to what cannot be prevented, to submit to what we know by experience we are powerless to repress. There is a difference between tolerating and conferring a legal privilege.

(4) That to tolerate public solicitation on the part of registered women, within certain definite administrative limits, and to repress it on the part of unregistered women, does not constitute a practical impossibility. It is simply a matter of police supervision; and, according to reliable evidence, it would not require more than a fortnight for one of their agents to become acquainted with the women of his district, and to recognize at a glance those who were under supervision and those who were not.

(5) Lastly, that to tolerate solicitation on the part of registered women, and not to tolerate it on the part of the unregistered, is *ipso facto* to collect in the camp of the medically supervised women all prostitutes who either accept the benefit of tolerance of their own accord, or who are registered by the law. It is, on the one hand, to tolerate what cannot be prevented, and on the other hand, to render street solicitation sanitary. A woman will never be prevented from soliciting on the boulevards or in the streets, but she may be compelled one day to registration. It is to suppress as far as possible the trade of the unregistered in street solicitation, for it is shown by statistics that the danger of syphilitic contamination is greater in the case of unregistered women. Out of one hundred unregis-

tered women arrested by the police, thirty-three are found on the average to be affected with venereal disease.

"It is the class of unregistered women who furnish the largest proportion of patients. Out of twenty-three thousand eight hundred and fifty-six unregistered women examined from July 1, 1871, to December 31, 1878—that is, during a period of seven and a half years—seven thousand eight hundred and thirty-three cases of disease were found, or thirty-two and one-eighth per cent." (Clerc, "Evidence before the Commission of Police," Paris, 1879). On the other hand, the annual average of registered women found to be syphilitic was ten per cent. for the years 1882, 1883 (Corlieu, "Prostitution in Paris," 1887).

The partisans of this system have been accused of inconsistency, and it has been said that their conclusions are illogical, because, on the one hand, they regard public solicitation as a misdemeanor, which should be legally repressed, and, on the other hand, they accept this solicitation. So that the same act is sometimes punished by law, and at other times tolerated. But this inconsistency is more apparent than real; for, as a matter of fact, the law never tolerates public solicitation. The proof is that it does not punish it by imprisonment—like theft, for instance—but by a permanent punishment—namely, by registration, with administrative and medical supervision—which is only ended by the woman renouncing her profession.

Such are the two systems, which may be summed up as follows:

(1) The absolute prohibition of all solicitation in the public thoroughfares.

(2) The continuance of the present system (in Paris) of tolerance with regard to registered women, but strict prohibition of tolerance toward women who are not submitted to administrative supervision.

It is for municipal authorities to decide between these two systems.

Hospitalization and Treatment

The public prevention of syphilis does not consist only in administrative repression and police supervision; it also includes measures of attacking the disease medically, by means of treatment in hospitals, with a view to cure the patients and destroy the germs of contamination. As to the principle of measures of this kind, there is no question, but there are certain reforms or innovations which may with advantage be introduced into the present system of the hospital treatment of syphilis.

The two following proposals are submitted by the Commission:

1. The number of beds provided for cases of venereal disease being notoriously insufficient, they should be increased in the proportion recognized as necessary by a careful inquiry into this subject.

2. This increase in the number of beds for venereal disease would be better carried out by the creation of new special hospitals than by the creation of special departments in the general hospitals.

It is obvious that the most effective means of diminishing the number of syphilitic contaminations is to hospitalize every patient affected with contagious lesions, so as to remove the possibility of transmitting contagion.

To hospitalize syphilis in its contagious forms is to render it inoffensive.

It follows, therefore, that the number of beds at the disposal of the public authorities for the treatment of syphilis should always be equal or superior to the demand. No expense should be spared, for this is the true means of getting rid of syphilis in the most practical way. It must also be borne in mind that the expenses of to-day constitute economy for the future, by diminishing the number of contaminated subjects.

The number of beds at present devoted to the treatment of syphilis is certainly much less than the actual requirements, but to what extent the number should be increased requires a careful inquiry.

In the second place, the Commission considers that this increase in the number of beds for the treatment of syphilis should not be carried out by the creation of special departments at the general hospitals, but by the formation of new special hospitals entirely devoted to the treatment of venereal diseases.

Everyone knows that the special departments are attended by a mixed class of patients. Rogues, vagabonds, and prostitutes are mingled with honest persons. Such a state of things should be avoided, especially in women's hospitals. The honest wife of a workman, who has come to hospital for pneumonia or typhoid fever, should not be compelled to associate with prostitutes and prowlers, or, what is still more dangerous, with one of the "pimps" who practice recruiting for the brothels and wine shops. Lastly, these new hospitals should be placed outside the town, both for the sake of hygiene and economy.

3. Medicines for the treatment of venereal diseases should be gratuitous, both in the general and in the special hospitals.

4. The special hospitals for prostitutes, the consultations, and the medicines should be gratuitous.

The practical object of these two proposals is to help patients in the treatment of their disease. It is manifest that if a patient has to travel a long distance to obtain gratuitous advice at a central hospital, he will lose half a day's work, and will abandon treatment as soon as possible; but if there is a special hospital handy, with the same methods of treatment, he will profit more willingly by the facilities offered him.

5. In the special hospitals out-patients should be attended by assistant physicians or surgeons; in-patients by the honorary physicians or surgeons. The assistant physicians or surgeons appointed to these duties should hold office for five years.

This last proposition requires some explanation, and results from the fact that the out-patient practice of special hospitals is not always what it should be. The consultations are sometimes left by the chief to his house-surgeons, and by these to the dressers. At other times the examinations are hurried, and only the urgent cases are attended to properly.

But as there is a limit to human endurance, and as a physician, after a long visit to the wards, cannot be expected to take

charge of a hundred or more out-patients (at the St. Louis Hospital, Paris, two or three hundred), it is necessary to establish a division of labor. This may be effected by assigning all out-patients to a medical officer of the Central Bureau, and all in-patients to the honorary physicians and surgeons.

Also, it is advisable for the medical officer in charge of out-patients to take office for not less than five years, so as to serve a thorough apprenticeship to the speciality, in the interests of the patients.

6. Lastly, in the provinces, where the old prejudices still rule which regard venereal patients as criminals and condemn them to ostracism, reforms and special hospitals are still more urgently required. It has been ascertained that in several provincial districts (in France) cases of venereal disease of both sexes are either refused admission into hospitals, or, if admitted, are relegated to badly ventilated and insanitary quarters. Such offenses to humanity and good sense are intolerable; and therefore it is proposed that in every provincial town, or at least in each principal town of the district, a special department should be created for the treatment of venereal diseases, and these departments should be conducted according to all the rules of hygiene.

Reforms in Teaching

It is evident that one of the best means of diminishing the spread of syphilis is by giving better instructions in this disease to the future generations of medical men than is done at present. In the present state of affairs syphilis is little understood by medical men. It is only really known by a small number who have held appointments in special departments. Many students go through their curriculum and become qualified without having visited the special hospitals, except out of curiosity. At the examinations candidates are seldom questioned on the subject of syphilis. Questions on this subject are even avoided, so as not to embarrass students who have done conscientious work in the general hospitals without having had the opportunity or the leisure to learn syphilis.

The consequence is that the majority of students are launched

into practice with only an elementary and superficial knowledge of venereal diseases in general and syphilis in particular, with the natural result that errors in practice actually swarm. This explains why medical men mistake chancres and mucous patches for something else; why they give syphilitic infants to the care of a healthy nurse, or inversely; why they regard syphilis as cured after a few months or even weeks of treatment; and why they permit marriage to uncured syphilitics. This explains why so many married women are infected with syphilis and have so many miscarriages, or give birth to infants which die soon, or infect their nurses, etc.

It is beyond contradiction that numbers of these deplorable errors might be avoided by a more complete, or, rather, less rudimentary, education in the important disease which causes so many individual and social dangers. The manner in which this education should be carried out is embodied in the following scheme:

1. That the venereal practice of all hospitals should be open to all medical students.
2. That every candidate for his degree in medicine should be required to present a certificate of three months' special study in venereal diseases.
3. That the personnel of the Lock Hospitals (St. Lazare in Paris) should be appointed exclusively by competition.
4. That the practice of the Lock Hospitals should be utilized for the special instruction required by students.

Such a scheme would result in creating a scientific movement with regard to syphilis, a movement which would spread the study and knowledge of the disease.

In the first place, it would constitute a guarantee for a certain special education. It is true that the subject of syphilis cannot be grasped in three months; but in that time enough may be learned to know its main points, the chief symptoms which are met with in practice, the general treatment, the individual and hereditary dangers, the risks of contagion and dissemination, etc. This special instruction would be for the benefit of both students and patients, considering the frequency with which syphilitic affections are met with in general practice.

The Question of Lock Hospitals (St. Lazare)

A Lock Hospital is the type *par excellence* of a hospital for venereology, owing to the number of cases of venereal affections, and syphilis especially, which it contains, under conditions which are peculiarly favorable for medical observation. The histories of the patients are known, and are registered in the hospital case-books. This is especially important in a disease of long duration such as syphilis. Therefore, the Lock Hospital might become unique of its kind, and constitute a great school of syphilis.

Instead of this, the Lock Hospital, from the scientific point of view, is a tomb. All the richness of pathological and clinical material which it contains within its walls is wasted, and is only observed by the medical staff and the house-surgeon; whereas it might be used for the instruction of a whole army of assistants and medical men. After the fashion of the ancient sanctuaries, the Lock Hospital is a sealed book.

Let us inquire into the reasons which keep the doors of the Lock Hospital hermetically closed against the medical profession.

First of all, we are told that it is not a hospital, but a penitentiary. To this we reply that it should not be looked upon as a penitentiary, but as a hospital for the treatment and cure of patients. The inmates, who are only guilty of the misfortune of having contracted venereal disease, should not be looked upon as criminals, but as hospital patients, and treated accordingly. In the present state of affairs, they have a horror of the Lock Hospital.

If, in the interests of public health, it is necessary to sequestrate women affected with venereal disease, simple justice demands that this infraction of the principles of liberty should be tempered as far as possible. Instead of this, women who are only guilty of being affected with contagious diseases are thrown into prison, and still further degraded by being associated in the same building with thieves and criminals of all kinds (St. Lazare). Such a system is hardly advantageous for

the treatment of syphilis; on the contrary, the humiliation, degradation, and moral effect produced by it is detrimental in a high degree to the treatment of such a disease. Nothing better could be chosen to aggravate the prognosis of syphilis.

For this system should be substituted a special hospital, conducted on the same lines as other hospitals, with the only difference that patients should not be allowed to leave except with a medical certificate of cure. This hospital should be exclusively devoted to the treatment of disease, and all the useless discipline and vexatious measures appertaining to the penitentiary should be absolutely abolished.

Another objection which was raised against the opening of the St. Lazare Hospital to the medical public was this: It was said to open a kind of hall of prostitution to medical students, under cover of medical instruction.

We all know arguments of this kind, and what they are worth, by personal experience. This was the objection which was brought against Ricord when, at the beginning of his career, he struggled with administrative red-tape to open the venereal practice of the Midi Hospital to medical men. Many years afterwards the same objection was raised to the opening of the Lourcine Hospital, and even now medical men are only admitted by special permit.

A third objection was that among the registered women at the Lock Hospital were names belonging to honorable families, and that the admission of students to this hospital would lead to making these names public. But, even if any student was so indiscreet as to noise abroad any information he acquired in this way, it is obvious that such an event could easily be avoided by omitting the names of the patients on the bed-cards and replacing them by numbers.

To sum up: it is obvious that the arguments generally invoked to exclude the medical public from Lock Hospitals have no real weight. In any case, they ought not to prevail against numerous considerations of a higher nature, which claim the transformation of these penitentiaries into hospitals open to medical men. The Lock Hospitals enclose scientific treasures which, for specious reasons, have hitherto been unexploited,

thanks to what has been justly called a defective and sterilizing organization. These treasures should be given up to those who will use them for special education and for the greatest benefit of everyone.

Lock Hospitals are great centers for syphilis, and capable of imparting medical instruction to a large number of students. There is no doubt that if they were freely open, if the emulation of its staff was stimulated by an assemblage of students, and if special courses of teaching were instituted, they would contribute to the spread of the knowledge of syphilis, which is so deficient in the majority of practitioners.

Prevention of Syphilis in the Army and Navy

The following measures were proposed for the prevention of syphilis in the army:

1. To institute a series of lectures with the object of instructing soldiers on the dangers of venereal disease in general and syphilis in particular; on the benefits of specific treatment, and on the necessity for prolonged treatment; and on the perils of clandestine prostitution carried on by unregistered women.

These lectures should be given by the military surgeons of each corps, and should be annual. Similar instruction should be given to reservists the day after their arrival. The number of reservists who contract syphilis during the twenty-eight days which they pass away from home is considerable.

By these lectures an immense number of young men who join the army in a state of almost absolute ignorance of venereal affections and their consequences could be enlightened by some essential ideas on the subject. A distinguished army surgeon, Dr. Burlureaux, has well remarked that "no collection of human beings can be so well supervised as the army, and the military surgeons might be the most active agents in the crusade against syphilis by instructing soldiers on the dangers of syphilis, by inspiring them with a salutary horror of this disease, and by showing them the necessity of immediate treatment. By this means salutary notions would gradually spread among the regiments, and would do far more for

prophylaxis than any measures of discipline. Moreover, as the majority of Frenchmen serve in the regiments either for several years or for twenty-eight days, it follows that at the end of a few years there would be a considerable diffusion of useful knowledge."

2. To obtain from a soldier recently affected with syphilis a declaration relative to the woman from whom he contracted the disease.

Special notices containing the names of the women pointed out by the soldiers should be submitted to the police authorities; and, reciprocally, it would be beneficial for the police to return these notices to the military authorities with mention of the diseases found in the women.

Such information furnished by the soldiers might reveal to the administration the existence of dangerous foci of contamination, especially as it is common in the army to see syphilis derived from the same source by several men of the same corps. A military surgeon mentions three cases in which eight, ten, and twenty-two soldiers were infected by the same woman. This authority adds that there is a special class of low prostitutes, called "prowlers," who have a special custom among soldiers.

3. To prohibit soldiers from frequenting establishments disguised under the name of wine shops, which are in reality non-supervised brothels.

4. To avoid all punishment in the preventive treatment of syphilis.

It is true that a soldier is no longer punished for having had the misfortune to contract venereal disease, but he is no longer given leave, which comes to much the same thing. In fact, the fear of the withdrawal of favors leads to concealment of the disease and recourse to quack remedies.

In the army, as in the civil population, to contract syphilis is a misfortune and not a crime. Therefore all punitive measures adopted are not only unjust and ridiculous, but even harmful, in that they are contrary to the common interest.

5. To replace general medical inspection by individual and private examination.

At the present time the examination of soldiers is generally made in a common room in which there may be twenty or thirty men belonging to the same corps. These consultations are not without some analogy to the ancient gatherings at which the Christians made public confession of their sins. But as customs have changed, and as syphilitics, even in the army, have little taste for these penitent humiliations, it happens that a number of young soldiers affected with venereal disease shrink from reporting themselves because it is necessary to confess their complaint in public. Consequently they avoid examination by numerous subterfuges.

Therefore in the army there is urgent need of reform to reduce the publicity of venereal affections to the strict limits of necessity.

6. To institute special police supervision round the large camps.

It is shown by experience that a special form of prostitution is established in the immediate vicinity of the large camps carried on by "prowlers" of the lowest class, and eminently prolific in venereal contagion of all kinds.

7. To institute reforms in treatment in the army.

If a soldier contracts syphilis, he goes to the military hospital to be treated for certain lesions, such as chancre, mucous patches, cutaneous syphilides, etc., and in two or three months he is discharged from hospital free of symptoms. But he is not cured. On the contrary, he is still under the influence of the disease, which cannot be cured in such a short time, and requires further treatment to avoid later manifestations. Patients are frequently treated at the civil hospitals for tertiary syphilis after having contracted the disease while in the army, for which they were treated at the military hospitals for a few weeks or months only.

In fact, the soldier leaves hospital "whitewashed," but not cured. And what happens to him afterwards? Is he given the advice to continue treatment? And when later on he leaves the regiment, does anyone warn him of the dangers of marriage, of infecting his wife, of begetting syphilitic children? Nothing of the kind. A syphilitic soldier who returns to his

regiment from hospital is treated as if he had been completely cured. And yet there are surgeons in his regiment who could carry on his treatment all the time he is on duty, for the hospital is not necessary for the treatment of a syphilitic subject otherwise in good health. If these surgeons were officially informed of the man's antecedents by the hospital authorities, they could continue his treatment and complete his cure.

To limit the duration of antisyphilitic treatment to the hospitalization necessary for the cure of certain transient symptoms of the disease is absurd in principle and disastrous in its results. The simplest remedy for this state of affairs would be to copy in the army what is done in civil practice.

In civil practice, when a patient leaves hospital after the cure of a chancre or some other specific lesion, he is told to continue his treatment as an out-patient as long as it is considered necessary. This could easily be done in the army by the regimental surgeons. The objection that the exigencies of military service are incompatible with medical treatment is met by the two following facts: (1) That the treatment of syphilis, excepting in the case of serious lesions, is generally simple, and can be carried out by the daily ingestion of a few mercurial pills or a few doses of iodide of potassium; (2) that a number of examples could be quoted in which this treatment has been carried out without in the least interfering with military duties.[1]

With regard to the navy, the same principles apply, with the addition of the following: (1) That in warships a medical inspection should be made before arrival in each port to prevent

[1] TRANSLATOR'S NOTE.—In the British Army, thanks chiefly to the efforts of Lieutenant-Colonel F. J. Lambkin, the treatment of the soldier is continued for some time after he leaves hospital. Lambkin's system is as follows: The soldier is treated in hospital by means of intramuscular injections of gray oil (containing 1 grain of mercury) once a week till all active signs have disappeared. "The time this will take averages from six weeks to two months. Then the number of injections is reduced to once a fortnight for three months. A rest from all mercurial treatment is then given for two months, and again a three months' course of fortnightly injections is given, followed by a two months' repose from treatment. Thus the patient is brought to the end of his first year's treatment. He is not then told that he is cured, but is kept under strict observation. Should he show any sign of relapse, further courses of three months' treatment, followed by the same amount of rest, are given. The average period of treatment and repose necessary is about two years" (*British Medical Journal*, November 11, 1905).

contaminated sailors from communicating with the shore; (2) that in all seaport towns there should be strict medical supervision of prostitutes with a view to prevent the contaminations so often contracted by sailors.

Summary of the Resolutions adopted by the Paris Academy of Medicine in 1887

1. The Academy draws the attention of the authorities to the developments of public solicitation which have taken place during recent years, and claims that this should be energetically repressed.

2. It points out the necessity of including in this category certain equally dangerous forms which public solicitation has assumed—namely, that of the so-called women's bars, and especially that of the wine shops.

3. It draws attention to the solicitation which occurs around colleges and schools, which results in tempting young men to debauch.

4. As these different kinds of solicitation result in the dissemination of syphilitic disease, the Academy claims from the public authorities a law of police supervision regulating and fortifying administrative intervention, especially with regard to minors, and capable of dealing with solicitation wherever it may occur.

5. The safeguard of the public health requires that prostitutes should be submitted to registration and sanitary supervision.

6. If registration is not accepted voluntarily, it should only be enforced by judicial authority.

7. Every woman who is found after medical examination to be affected with venereal disease should be confined in a special hospital.

8. Registered women should be examined weekly at fixed dates.

9. The number of beds devoted to the treatment of venereal disease is notoriously insufficient, and should be increased in the proportion found necessary by an inquiry into this subject.

10. This increase in the number of beds for venereal cases should be effected by the creation of new special hospitals rather than by the creation of special departments in the general hospitals.

11. Medicine for the treatment of venereal diseases should be gratuitous in all hospitals, both special and general.

12. A department for gratuitous advice and treatment should be attached to the special hospitals for the treatment of prostitutes.

13. In every provincial town, or at any rate in the principal town of each district, a special department should be created for the treatment of venereal diseases, and these departments should be conducted according to all the rules of hygiene.

14. The venereal practice of every hospital should be open to all medical students after a certain period in their curriculum.

15. A certificate of three months' study of venereal disease should be required from every candidate for a medical degree.

16. The medical staff of the Lock Hospitals should be appointed by open competition.

17. The medical officers for the inspection of prostitutes should also be appointed by open competition.

18. The committee of election for these appointments should be chosen from members of the Academy of Medicine, professors at the Faculty of Medicine, hospital physicians and surgeons, and the honorary staff of the Lock Hospitals. This committee should be nominated by the Prefect of Police on the recommendation of the Dean of the Faculty of Medicine.

19. In the army strict rules should be observed as regards medical inspection, the investigation of sources of contagion, and the suspension from military duties of all soldiers affected with venereal disease.

20. Clandestine prostitution should be dealt with by instructing soldiers in the dangers of this form of prostitution, and by claiming the coöperation of the civil authorities in purifying certain centers of contamination, either in the towns or in the purlieus of the camps.

21. Syphilitic soldiers whose treatment has been commenced

in hospital should be enabled to continue treatment after returning to duty under the direction of the medical officers of their regiment.

22. With regard to the navy, it is desirable that a medical inspection of warships should be made before arrival in each port, in order to prevent contaminated sailors from communicating with the shore.

23. It is absolutely essential that in all towns along the shore, especially in the chief ports, supervision and medical inspection of prostitutes should be strictly enforced with a view to prevent the contaminations so often contracted by sailors when in port, and the women found to be diseased should be treated in hospital till all infectious lesions are completely cured.

CHAPTER XXX

THE INFLUENCE OF SYPHILIS ON INFANTILE MORTALITY

I WISH to draw attention to the part which is played by syphilis in the terrible infantile mortality which is the principal cause of the present depopulation of France.

The relative depopulation which treatens our country is shown by statistics to be due, on the one hand, to insufficient natality, and, on the other hand, to excessive mortality, particularly in infancy. Naturally the two remedies indicated by theory are to increase the number of births and to diminish the number of deaths. But how do these two remedies concern us as medical men?

For my part I do not attach much importance to the first. I do not think it is in the power of medical men to increase the natality of our country, at any rate to an appreciable extent. Moreover, it appears that we do not set the example. It is my opinion that no patriotic exhortation or remonstrance will modify the state of things which we deplore.

There remains only the second of these two remedies. Here we are on firmer ground, where we may be more useful, and on this ground our efforts may end in definite results. To diminish infantile mortality is one of our special attributes, and is *par excellence* work of a medical kind. What is to be done to arrive at this result? It is obvious that we shall only succeed in diminishing infantile mortality in an efficacious manner by determining its many complex and varied causes. It is, therefore, necessary to preface our efforts in this direction by instituting as minute and complete an inquiry as possible into the morbid causes which affect early infancy, as well as the anti-hygienic conditions which decimate it. It is necessary that

each of us should add to this inquiry the results of his personal experience. In this way only can we combine the different elements of a repressive intervention, which is at the same time rational in principle and active in practice: by attacking and attenuating the causes of mortality which menace early age by the three measures at our disposal—namely, hygienic measures, such as the supervision of infant feeding, administrative measures, and, lastly, medical measures.

There is one cause of mortality which especially affects infancy, and which, by its intensity and by its frequency, is a veritable factor in depopulation, as I shall proceed to show—I refer to *syphilis*. It appears to me that this cause should find a place in the discussion with which we are concerned, and that it should be signalized, studied, and appreciated as it merits. I therefore propose—

1. To establish by a series of statistics that syphilis plays an important part in infantile mortality, and to determine, if possible, the particular conditions which render this disease more or less formidable.

2. To point out the different measures to be carried out with a view to attenuate, as far as possible, this special cause of mortality.

Paternal Heredity.—I will first of all give the statistics derived from two hundred personal observations concerning syphilitic subjects who married while in a condition of latent syphilis, and who were fortunate enough not to contaminate their wives.

Here we are concerned with syphilitic fathers, and mothers free from syphilis, and these statistics, therefore, show the influence of exclusively *paternal* heredity.

It is necessary to mention that these two hundred observations have all been collected from private practice (an important point, as we shall see later on); also that they include patients who had undergone prolonged treatment before marriage, as well as those who had married prematurely, at periods more or less adjacent to the initial infection.

These statistics deal with four hundred and three pregnancies, which resulted in two hundred and eighty-eight living

children and one hundred and fifteen still-births, abortions, or infants who died soon after birth. In round figures, there were twenty-eight deaths in one hundred pregnancies.

In other words, the children issued from a syphilitic father and a healthy mother die in the proportion of one in four, owing to paternal syphilis.

Maternal Heredity.—But this is nothing compared with the pernicious influence of syphilis when it is derived from the mother only, or from both parents. When the mother becomes infected with syphilis, or when her syphilis is added to the father's, the infantile mortality which results can only be described as terrible.

The remarkable predisposition of syphilitic women to abortion is a well-known fact; more important still is the fact that the syphilitic influence is often prolonged so as to affect several pregnancies and cause repeated abortions.

Syphilitic women, married either to healthy men or to syphilitics, have been known to abort as many as eleven times. One of my patients, who was infected by her husband, had six pregnancies, which all ended in abortions at the third, fourth, or fifth month. Grefberg reported the case of a syphilitic woman who, although married to a healthy man, had eleven miscarriages in ten years, and after this gave birth to a syphilitic infant.

But the following case is still more instructive. A young married couple had three healthy and vigorous children. The husband then contracted syphilis during an extraconjugal misadventure, and communicated the disease to his wife. The latter became pregnant seven times after this, and the seven pregnancies resulted in three abortions and four premature still-births.

The influence of maternal heredity is not only manifested by abortion, but also affects the infants born at term in many ways, which I cannot deal with here, but which lead to a considerable mortality, which has its maximum during the first few weeks or months after birth. This infantile mortality attains such a formidable figure that we may state as an axiom that a child conceived by a woman in the course of recent syphilis is almost

certainly condemned to death. In other words, a woman becoming pregnant in the course of syphilis of a few months' duration will either abort or will give birth to an infant destined to early death.

I have in my notes the history of forty-four women in private practice who became pregnant while they were affected with recent syphilis; some of them had received their syphilis and their child simultaneously from the husband. These forty-four pregnancies resulted in forty-three deaths and one living child. The forty-three deaths were subdivided into twenty-seven miscarriages, six still-births, eight cases which died soon after birth, and two cases which survived six weeks and seven months respectively. Forty-three deaths out of forty-four births! What a proportion! In truth, if syphilis was as deadly as this at all its periods, no other disease could be compared to it as an agent in depopulation. But this, fortunately, only applies to one stage in the evolution of the disease.

The influence of syphilis on the children of syphilitic parents is shown by the following statistics dealing with the results of two hundred and eight pregnancies occurring in one hundred syphilitic women. Of these, sixty only survived, and the remaining one hundred and forty-eight consisted of abortions, premature births, still-births, and infants who died shortly after birth. This gives a mortality of seventy-one per cent. Moreover, this lamentable mortality happened in cases exclusively occurring in private practice among the middle and upper classes—that is to say, among a class of patients where the gravity of syphilis has three factors of attenuation, viz., hygiene, intelligence, and medical care. What, then, must it be among hospital patients?

In hospital practice this figure is raised to eighty-six per cent. (at the Lourcine Hospital). It might be said that this excessive mortality is due to the fact that the majority of the patients at the Lourcine Hospital are young prostitutes who are addicted to all kinds of excess and imprudence, who do not carry out proper treatment, and who do everything they can to procure abortion. However, at the St. Louis Hospital, where the female patients are of a better class than at the Lourcine,

the mortality among infants born of syphilitic mothers is almost the same—viz., eighty-four per cent.

It follows from the preceding evidence that this polymortality among infants often ends in depopulating the domestic circle in families where syphilis is introduced. It is unnecessary to relate all the facts which have been published on this question, but the climax is reached in a case reported by Ribemont Dessaignes concerning a woman who contracted syphilis from her husband soon after marriage, and who was not treated for her syphilis. This woman had nineteen pregnancies, which resulted in five still-births and fourteen infants who died under six months of age!

In the face of such results it is no exaggeration to say that syphilis plays an important part in depopulation. However, to the personal statistics I have mentioned above it is necessary to add others, for the following reason: These statistics which I have produced have not been accepted universally, and certain of my colleagues have regarded them as exaggerated. "You look too much on the dark side of things," they have remarked. "In reality syphilis is less fatal for infants than you have stated. Moreover, you are a bad judge of the question, because you naturally see the worst cases in your practice, while the less severe cases, which are more numerous, escape your notice."

In order to test the value of this objection, I have checked my own figures by the results obtained by my colleagues. With this object I have for several years made careful notes of all the cases of syphilis in families which I have met with in my reading with regard to the resulting infantile mortality. In this way I have formed statistics which no one can repudiate, for many of the cases are reported by observers such as Depaul, Trousseau, Parrot, Jacquemier, Ricord, Diday, Roger, Marjolin, Lancereaux, Sireday, Lannelongue, etc. On referring to these statistics, I find four hundred and ninety-one pregnancies observed in syphilitic families in which one or both parents were syphilitic. These pregnancies resulted in one hundred and nine living children and three hundred and eighty-two deaths, or seventy-seven per cent. But this proportion is prac-

tically identical with that which results from my personal observations.

The average resulting from all the preceding statistics gives sixty-eight per cent. of deaths in syphilitic families, taking into account all cases, even the most favorable, in which the father only is syphilitic or has had previous prolonged treatment. This figure is no doubt subject to revision by still more extensive observations, and may vary somewhat in different series of cases; but it is certainly not far from the truth, for it is based on nearly one thousand five hundred observations, gathered from different sources, and I do not think it is likely to undergo any important modification from the results of future investigation.

But being given this figure, and knowing the undoubted frequency of syphilis in all classes of society, it follows that *syphilis plays an important part in infantile mortality, and consequently that it takes its place among the factors in depopulation.* This is the first point which I have endeavored to establish.

Remedies.—In the present discussion it is impossible for me to enter into the innumerable details concerning the different remedies which are necessary to counteract this state of affairs, and I shall confine myself to generalities. In order to diminish the terrible mortality due to hereditary syphilis, three things are necessary:

1. To protect ourselves against syphilis better than we do at present.

2. To treat syphilis better than it is usually treated.

3. To place more severe restrictions on the marriage of syphilitic subjects.

The general prophylaxis of syphilis, the treatment of syphilis, and the question of marriage and syphilis, are the three subjects for discussion. Volumes could be written, and have been written, on each of these important questions, but I shall confine myself to skimming these subjects and indicating their chief points.

1. It is quite certain that we are insufficiently protected against syphilis. The system of prophylaxis which is reputed

to defend us against syphilis is founded on old administrative methods which are universally condemned, but which, nevertheless, persist. Very little attention is paid to syphilis—at any rate, as regards its mortality and prevention.

It is certain that syphilis causes a certain number of deaths, as I have just pointed out, and it is needless to say that it is not only children who die of it. But if we read the statistics of deaths—in the *Weekly Bulletin,* for example—we find that the word "syphilis" is not even mentioned!

Again, our public health bodies do not concern themselves with anti-venereal prophylaxis, and no mention of syphilis can be found in their *Transactions.* The same with our treatises on hygiene: the subject of syphilis is hardly mentioned in them. The Municipal Council, it is true, considered the question a few years ago, and it would be ungracious on my part to forget that it did me the honor to request me to formulate a scheme for the regulation of prostitution in Paris. But reforms were abandoned, and as for my proposal, it now lies among the administrative archives in a peaceful slumber, which no doubt will be eternal.

For these reasons a stranger, judging by the administrative documents, would believe, on the one hand, that there were no deaths from syphilis among us, since our official statistics mention no case of death from this disease; and, on the other hand, that all is well with us as regards the prophylaxis of syphilis, since those who have charge of the public health are not concerned with any improvements or reforms to be introduced into the present system.

However, all is not well. Far from it. Syphilis has neither decreased in intensity nor in frequency; on the contrary, it is on the increase. Of this I am convinced, although I have not at hand the statistics to prove it, as these are almost impossible to obtain. But it can hardly be otherwise, considering the license that is given to prostitution, which is not only carried on by public solicitation in the streets, but even invades the cafés and theaters, the wine shops, the railway stations, and the photographers' shops, etc.

The more the temptations, the more the regressions; and the

more the regressions, the more the contaminations. This is self-evident, and these different terms are logically connected.

2. In the second place, if we wish to diminish the disasters of heredo-syphilitic mortality, it is necessary that syphilis should be better treated than it is at present.

If we investigate the observations dealing with these multiple abortions and the numerous cases of infants who died soon after birth, we shall find that, in the great majority of cases, they concern patients who have undergone insufficient treatment for syphilis. Again, patients who are thus afflicted in their infancy will tell us: "If I had only been warned of this, and been told that it was necessary for me to undergo prolonged treatment, even after the cure of the symptoms which I was suffering from, I should have escaped these misfortunes." From this it follows:

(1) That it is necessary to treat syphilis for a longer time than is usually done. It is no exaggeration to say that a syphilitic should be treated for several years in order to render him immune both as a husband and as a father.

(2) That the whole treatment of syphilis does not consist only in writing prescriptions for mercury and iodide of potassium. There are other things to be done than this, considering the social consequences of the disease. It is our duty, not only to instruct our patients concerning syphilis, but to point out to them the dangers of their disease with regard to others, especially their wives and future children. It is to their interest for us to tell them that syphilis is not a disease which is all over when the symptoms have disappeared; that it requires methodical and prolonged treatment; that it is contagious, and especially contagious by lesions which are mild and apparently insignificant; that it may affect the children when it has not been sufficiently treated, etc.

And I may add that, from another point of view which concerns us personally as medical men, it is absolutely essential to tell this to our patients, so that they cannot blame us afterwards for the disasters which may occur from their ignorance of such things.

3. I have many times heard patients who, having married

prematurely, had infected their wives and lost several children, lay the blame on their physician, and recriminate him in this way: "Why did my doctor allow me to marry? Why did he not prevent me from marrying, when he knew my condition? If he had warned me of the dangers which my disease would bring into marriage, I should have waited. It is he who is to blame, not I."

However, all the syphilitics who enter into the married state do not do so with the permission of their physician. Many do without this permission, and, either from ignorance of the danger, or from indifference, or from fear of a reply which will upset their plans, abstain from consulting us on the question of marriage, without mentioning those who consult us as a matter of form, having previously decided to go their own way, whatever we advise. But there are still a good many who come to us honestly, and accept our decision regarding the possible date of marriage which will be free from danger for their future family.

But I am bound to say, and can prove my words, that a number of our colleagues show a remarkable tolerance concerning the marriage of syphilitics. I have in my notes a hundred observations dealing with syphilitic subjects who, having married in the second, or even in the first year of the disease—and this, they have assured me, with the consent of their physician—have bitterly repented and cruelly expiated this error. Indeed, the date when a syphilitic subject may enter into matrimony without risk to his wife or children is much later than is generally believed. It is always dangerous to allow a syphilitic to marry till after *three or four years of thorough treatment.* Marriage being an optional affair, to which no one is compelled at a fixed date, a syphilitic candidate for marriage should not enter into it before the necessary time has elapsed to render him free from danger for his future family. But, as we are frequently consulted on this matter, it follows that it depends on us to diminish, at any rate in a certain measure, the fatal results of these premature unions—that is to say, to attenuate the terrible mortality which affects the infants of syphilitic parents.

In conclusion, I may formulate the two following propositions:

1. Syphilis constitutes an active and powerful cause of infantile mortality, which may be estimated approximately at sixty-eight per cent.

2. The proper remedies to diminish this special cause of infantile mortality are of two kinds: the one by methodical and prolonged treatment, and by the prohibition of premature unions in syphilitic subjects; the other by the general prophylaxis of syphilis as a part of public hygiene.

The first is in our hands, and it depends on us, by applying it in a strict manner, to attenuate the infantile mortality of syphilitic origin.

The second is in the power of Parliament and the Department of Public Health. We all know how defective are these public measures, and it is high time they were improved.

CHAPTER XXXI

THE SOURCES OF SYPHILIS IN WOMEN

In this report I wish to point out a common prejudice which is eminently detrimental to the cause of the public prophylaxis of syphilis. Many people, including those who formulate the rules and regulations for this prophylaxis, in their capacity as administrators, police officials, municipal councilors, members of parliament, etc., represent syphilis as a disease derived exclusively from debauch, and dangerous only to those who expose themselves to it in the usual way. "The syphilitic contagion," they say, "is not like that of small-pox, measles, typhoid fever, diphtheria, etc. Syphilis seeks out no one; on the contrary, it is necessary to go in search of it, and expose oneself to it voluntarily, in order to become a victim." Consequently no interest is taken in public prophylaxis. "What is the use," they say, "of preventive measures to protect people who can very well protect themselves? What is the use of a number of administrative and police regulations to effect what can be effected much better and more certainly by personal conduct?"

Such a prejudice would at most deserve mention if it was harmless in its practical consequences. But as it is of a nature to be gravely prejudicial to the interests of public health, it should be denounced and energetically opposed.

It is not my purpose, however, to institute here a refutation *in extenso* of this deplorable prejudice by demonstrating a whole series of facts which, for medical men, are established truths. We all know that syphilis often affects those who would seem to be protected from it. We have all seen its ravages among married and honest women, who expiate in this way the sins of their husbands; among infants; among wet-nurses; among the children, the husband, and the sucklings of these nurses;

among nursemaids and others who attend on syphilitic children. We all know the unfortunate professional contagions which often affect medical men, medical students, and midwives, and the so-called domestic contaminations caused by living with a syphilitic subject or a syphilitic infant. I recently reported the history of a veritable epidemic in which seven persons were infected with syphilis which was introduced by a wet-nurse into an honest family.

I shall pass over these facts, which are matters of well-established notoriety, to consider a most important point, the demonstration of which is most difficult and most delicate, and which hitherto, so far as I know, has not been attempted. This is to investigate, in a given number of syphilitic women, how many cases were derived from *unmerited contagion*. In other words, in a given number of syphilitic women, how many have contracted syphilis under the morally and socially irregular conditions which are usually considered as the exclusive origin of the disease, and how many have contracted the disease under the opposite conditions—that is to say, honestly and irreproachably? A problem of this kind can only be dealt with in private practice, for among hospital patients we have only their own statements to depend upon. In private practice we can often penetrate the family circle and observe the moral surroundings; we can sometimes obtain the intimate confidences of both husband and wife, and compare their symptoms. In this way I have collected notes of a number of private cases with a view to elucidating this special point. During the last twenty-seven years I have seen in my consulting-room eight hundred and eighty-seven women affected with syphilis, who can be divided into two groups, which are absolutely distinct as regards the origin of the disease:

(1) Cases of syphilis of sexual origin.....	842
(2) Cases of syphilis of non-venereal origin.....	45
	887

The second group is composed of very varied cases, having in common only their non-venereal origin:

Cases of hereditary syphilis	7
Accidental infection in infancy	4
Infection of wet-nurses by heredo-syphilitic sucklings	8
Infection of midwives professionally	5
Domestic contagion from infants, wet-nurses, or syphilitic servants (all occurring in married women or their daughters)	12
Infection through vaccine	2
Infection by Eustachian catheter	2
Case of rape	1
Cases of unknown origin, but certainly not venereal	4
	45

These are all cases of what may be called syphilis of the innocent, or *syphilis insontium*. They therefore constitute a first series of cases of *unmerited syphilis*. The number of these cases is forty-five out of eight hundred and eighty-seven, or a little over five per cent. They are, therefore, relatively uncommon, but nevertheless constitute a proportion which cannot be neglected.

With regard to the eight hundred and forty-two cases of syphilis derived from sexual contamination, the results of my investigations show that they may be divided into three groups, as follows:

Women belonging to the demi-monde	366
Married women	220
Women of unknown social status	256
	842

These figures require some explanation.

1. In two hundred and fifty-six cases I was unable to discover the social condition of the patients. This is to be regretted from the point of view of statistics; but when a medical man is consulted by a woman with regard to syphilis, he may receive the confidences of his patient, but he has no right to institute an inquiry into her social position.

2. In three hundred and sixty-six cases the women belonged to the demi-monde. The evidence of this was obtained either

by their own confession, or from the presence of a certain manner which seldom deceives the practised eye. They were all women of irregular life, from the high-class demi-mondaine to the lowest prostitute. The details of this complex group do not concern the question at issue, and I shall only mention the large proportion of actresses who figure in this group. In fact, sixty-five women were connected with the theater, belonging to the class who carry on what may be called "prostitution on the boards."

3. The most interesting and important point shown by these statistics is the number of cases of syphilis occurring in honest and married women. Out of the five hundred and eighty-six patients whose social position was ascertained, no less than two hundred and twenty were married, or said they were married (for I did not see their marriage certificates!).

It is necessary, however, to deduct some cases from this figure to obtain its true value. For instance, there were ten cases of married women who contracted syphilis, not from the husband, but from a lover; also ten other cases in which I examined the husbands and found them free from the disease; also two cases in which syphilis was found in both husband and wife, but which had infected the other was impossible to determine. There are also thirty-four cases to be deducted in which I did not see the husbands. All these concerned married women who attributed their contagion to their husbands, but as the husbands were not examined, these cases cannot be included. But, after eliminating all these cases, there remain no less than one hundred and sixty-four married women who contracted syphilis from their husbands. These cases are authentic, for I examined the husbands and found them syphilitic, and with syphilis dating anteriorly to that of their wives. I interrogated them, and received their confessions and their regrets. Of these, eighty-six had contracted syphilis before marriage, had married prematurely before they were cured, and had transmitted the disease to their wives either directly or by conception; thirty-nine had contracted the disease after marriage, and had infected their wives by the chancre, or by secondary lesions, or by fœtal contamination. In the remain-

ing forty-three cases I omitted to specify whether the contagion of the husband was before or after marriage. Here, then, is a total of one hundred and sixty-four women who were honestly and conjugally infected with syphilis, and this figure is certainly a minimum, since I have eliminated from my statistics a certain number of doubtful cases, some of which might have increased the figure. This minimum being accepted as the basis for discussion, we can reduce it still further, if necessary, by adding the two hundred and fifty-six cases of unknown social position to the demi-monde. This gives the result that *out of one hundred women affected with syphilis, eighty-one belong to the demi-monde, or loose women of all classes, and nineteen are married women.*

This is certainly an extraordinary proportion, and I must admit being surprised myself at the result; but I have reduced this figure by the deductions mentioned above, so that it must in reality be rather below the mark. Moreover, I have carried out this investigation with scrupulous precision and absolute impartiality, and as my results have been obtained from observations extending over twenty-seven years' practice, the usual causes of error which falsify so many statistics have been eliminated. I am also happy to say that my illustrious teacher, M. Ricord, agrees with me on the frequency of syphilis among married women. After reading my notes, he said: " You have not exaggerated this point at all, and I have seen the same as you, and in the same proportions that you have indicated."

We must, therefore, accept the fact that out of one hundred syphilitic women, nineteen are honest women and married. This figure is significant, and gives a crushing reply to those who regard syphilis as the monopoly of debauchery. In fact, all comment is superfluous after such a convincing arithmetical demonstration.

But this is not all. If we wish to establish the proportion of cases of syphilis which may be justly termed *unmerited,* compared to those which have been uncharitably baptized by the contrary denomination, we must add to this figure of nineteen per cent. that of five per cent., which represents, as we have previously seen, the average of syphilis of non-venereal origin.

This results in a total of twenty-four per cent. as the average of unmerited syphilis!

That is to say, that out of a total of one hundred syphilitic women observed in private practice, twenty-four cases are due to what may be called honest contaminations apart from immorality. This is the reply to those who look upon syphilis as exclusively derived from debauchery.

I consider it a matter of the greatest importance to produce these figures, because they constitute a powerful argument against the adversaries of the public prophylaxis of syphilis. Since this question has been raised I have often heard the following objection: "You urge the public prevention of syphilis; the intention is certainly good in principle, but whom will it benefit? Almost exclusively the libertines and the habitués of places of evil reputation. In fact, you are acting in the interest of the immoral portion of the public. Further, your prophylaxis may be an encouragement to debauch by the security which it offers. The syphilitics, after all, have only got what they exposed themselves to voluntarily. Those who fear syphilis should not run the risk of contracting it."

But it is unnecessary to point out how this objection to all attempts at prophylaxis will prejudice the cause which we physicians and hygienists uphold if it spreads among the administrators and members of parliament—that is to say, among those who formulate our laws and regulations. Fortunately, this doctrine is only based on ignorance of the conditions which preside over the propagation and dissemination of syphilis. It will surely be repudiated by all independent men, who, after close examination of the question, cannot but come to the same conclusions which I have just reported. From the experience of an already long practice, I cannot sufficiently condemn this doctrine, and I do not hesitate to declare it as both absurd and cruel.

It is cruel because it does not distinguish between the cases of unmerited syphilis and those due to immorality; because it brands with shame what is often the result of misfortune or of a youthful escapade; because it always condemns and never pardons. This austere and unjust doctrine would take us

several centuries backward, to the good old times when syphilis was regarded as a well-merited expiation, as a chastisement inflicted on sinners by the Divine wrath; when, in the hospitals for patients affected with "the great pox," as it was then called, a good beating constituted the whole treatment of the disease—a method which had only an indifferent therapeutic effect.

On the other hand, this doctrine is no less absurd than cruel, in that it is opposed to two truths revealed by practice. It is absurd, because it does not recognize the fact that syphilis spreads by contagion from any one to any one; because it does not recognize the numerous cases of syphilis which are derived from other sources than debauchery; because it does not recognize hereditary syphilis, syphilis in married women, syphilis of wet-nurses and sucklings, professional syphilis, domestic syphilis, accidental syphilis, etc. This doctrine is absurd because, in the case of syphilis derived from genital contagion, it places all cases in the same category, and regards them as equally unworthy of a preventive safeguard. No doubt syphilis attacks the immoral portion of the public, but, unfortunately, it does not attack them only.

Syphilitics are far from what they are represented to be by certain severe moralists. It is necessary for me to point out these banalities, because they have been contradicted. In the great majority of cases syphilitics are like every one else, and neither better nor worse than ordinary mortals. In a great number, syphilis has been an almost unmerited misfortune; without counting that in some cases it is the unfortunate consequence of a few transgressions, or even a single one—as, for example, when it attacks a débutant. In any case, syphilis is only the result of a vice which is almost general among men of our society, a vice which, I think, is hardly less common than in past centuries, or even more so, according to some.

Let us ask these rigid moralists, How many men of our day are there who have not exposed themselves to the risk of contracting syphilis, and "merited" it, at any rate once in their lives? In truth, if those only who are absolutely "without sin" were authorized to "cast the first stone" at the unfortu-

nate syphilitics, I should have little fear of the effect of the stoning on our patients! Therefore, it appears to me that a little more indulgence and charity would be desirable.

The conclusion which is aimed at in this exposition is that the public prophylaxis of syphilis will serve not only the interests of the immoral portion of the public; it will do other things, which are forgotten or disregarded. By attacking and diminishing syphilis at its most common sources—namely, at its venereal origin (in the etymological sense of the word)—it will diminish at the same time the number of cases of unmerited syphilis which are derived from these sources, as is shown in practice, and as I have just established in the case of one of their numerous varieties. But I think it will be agreed that these cases of unmerited syphilis are not unworthy of attention.

They tell us that we are "promoting immorality." No doubt syphilis due to immorality would be the first to benefit by an efficacious system of prophylaxis. But is it not a work of public utility, no less than a work of charity, to safeguard from such a disease even those who expose themselves to it, very often in a moment of forgetfulness? In the second place, I repeat that the suppression of syphilis of this kind would *ipso facto* suppress the contagions which they disseminate among other classes, especially among families.

In short, to institute a public prophylaxis of syphilis is not, as we have been reproached, to promote immorality only; it is not only to protect those who should have a better way of protecting themselves; it is, further, to protect those who have not the same means of protecting themselves—namely, only to mention the two most interesting classes, the honest women and children—the innocent victims of this formidable plague. To institute a public prophylaxis of syphilis is, in reality, to protect every one; it is to undertake a crusade of public utility—a crusade which is worthy of the efforts of all, whether medical men, hygienists, or administrators; it is, in a word, to sanitate generally, and to sanitate in the interests of every one.

CHAPTER XXXII

WET-NURSES AND SYPHILITIC SUCKLINGS

THERE are certain questions which seldom present themselves in hospital, and are only met with commonly in private practice. One of these is the duty of the physician in cases where he finds himself placed between a syphilitic suckling and a wet-nurse, whom this infant has or has not infected with syphilis.

This is a serious question, and one which is frequently met with in practice; yet it is absolutely neglected in the classical treatises, and either omitted altogether, or merely dealt with in a summary manner. From this absence of teaching on such a special subject, the young doctor naturally meets with difficulties and uncertainties of several kinds. Hence, also, the errors and omissions with which some of our colleagues have been reproached at the law courts.

In the following pages I shall give the results of my personal experience in these delicate matters, and point out the difficulties and dangers which arise in questions of this kind, and the line of conduct which we should follow in such circumstances. This is a subject in which prophylaxis and legal medicine are so mingled that it is difficult to separate them. This will explain the somewhat mixed character of this exposition.

I will give an illustrative case. Suppose we are consulted by a family for an infant a few days, weeks, or months old. We examine this child, and find signs of heredo-syphilis. But this infant has not been suckled by the mother, and has been given to a wet-nurse. The latter also requires examination, and we may find one of two things: either the nurse will be found healthy, or apparently so, or she will be found to be infected with syphilis by the suckling.

The question now presents itself, What are we to do under these circumstances? This requires to be specified in the clearest and most categorical manner. First of all, we have to consider the infant and prescribe treatment, hygiene, and diet. But this is not all; there are still two duties to be performed by the physician—two duties for which he was not consulted, which no one asks of him, which no one will thank him for, but which his conscience renders obligatory. These duties concern the nurse and society.

It is not sufficient in such a case to satisfy a family by taking care of the child; the situation imposes on us two other obligations. The one is to protect the *nurse,* if there is still time, from contamination through suckling; the other is to protect *society,* which is menaced by the nurse. In other words, we must prevent the nurse contracting syphilis from the suckling; and, if this nurse has had the misfortune to be infected, we must prevent her spreading contagion elsewhere.

I may here add, to give a general idea of what follows, that the accomplishment of these two duties is not always an easy matter for the physician. He is embarrassed by difficulties of a special kind; he meets with opposition which he cannot overcome without a great deal of trouble and dispute; and as the result of his honest and useful efforts, he generally receives little honor or gratitude, but much tribulation and unpleasantness.

But let us resume the question where we left off. On the one hand, we have a heredo-syphilitic infant, and on the other hand a nurse who may be healthy, or may be already infected by the infant. The problem which presents itself is, What are we to do under these conditions? I will consider the two alternatives separately.

The Infant is Syphilitic, but the Nurse Healthy

This is the most simple case, and the line of conduct is definite: *suckling of the child by the healthy nurse must be immediately suspended.* This is obvious, because if the nurse has so far escaped contagion, she will probably be infected if

she continues to suckle the child. I do not say that this nurse is absolutely certain to be infected, because cases have been seen in which syphilitic sucklings did not infect their nurses; but under these conditions she runs every chance of being infected. As Blondeau has pointed out, "suckling offers the most favorable conditions for the contagion of syphilis. In all other circumstances the infecting contact is not so often repeated, or so prolonged, as it is between the mouth of the suckling affected with contagious lesions and the nurse's nipple; and the state of erethism caused by suction favors the absorption of virulent matter."[1] The examples of syphilitic infection transmitted in this way from sucklings to wet-nurses are too numerous to mention, and I have myself observed more than eighty. We can, therefore, state without exaggeration that every healthy nurse, by suckling a syphilitic infant, runs a great risk of contracting syphilis, and only rarely escapes. From this it follows that a physician *should not allow a syphilitic infant to be suckled by a healthy nurse.*

The objection may be raised that it is a serious thing to remove the sick child from its nurse; that it is even dangerous to remove a healthy child from the breast and give it artificial nourishment; that many infants who are healthy while they have the breast die when they are fed by the bottle; that a feeble, syphilitic infant is still more likely to die when removed from the breast, etc.

To this I reply that I refuse a nurse to such a child because I have not the right to give syphilis to a woman. I do not consider myself justified, in order to save the life of a child, in risking the health of a nurse by the communication of such a disease as syphilis—a disease the gravity of which is not sufficiently known, but which increases in proportion as fresh knowledge is obtained with regard to its formidable tertiary period, and by the addition of other lesions the specific nature of which was formerly unknown. I repeat that *we have not the right to give syphilis to a nurse in order to save an infant.*

The two following cases show the possible consequences of infraction of the above principle:

[1] *Gazette des Hôpitaux*, 1866.

1. A child born of a syphilitic father was given to a healthy nurse. It soon developed syphilitic lesions and infected the nurse. The latter, in turn, infected her husband, who lost an eye by syphilitic iritis. The nurse died some years afterwards of syphilitic paralysis (Delore).

2. One of my patients, a syphilitic, married in spite of my warnings, and soon infected his wife. A child was born, and was given to a nurse. This child soon showed signs of syphilis, and infected the nurse. This woman, in turn, infected her own child, which died in a few months, and also her husband. She also lost an eye through iritis, and a year later gave birth to a syphilitic child, which died in two months.

A syphilitic infant must be deprived of its nurse; that is absolute. It is, no doubt, a cruel consequence, but it is a consequence which is necessitated by the infection of the infant and the risks to which the nurse is exposed. Moreover, a spyhilitic infant is not necessarily lost by being separated from its nurse. The bottle does not kill all infants, even syphilitic ones; and there are other methods than the bottle by which these unfortunate infants can be nourished, which I shall shortly describe.

We have thus established our first point: *to forbid the suckling of a syphilitic infant by a healthy nurse.* This rule is absolute, and forms the basis for the difficult questions which follow. With this there is no compromise, for it is founded on the facts of science and on the laws of morality. Although it is, apparently, hardly necessary, I urge that it is the duty of the medical man to forbid suckling, even if it is earnestly requested by the parents—even when it is consented to by the nurse, in spite of its risks. In the third place, I add that suckling should be forbidden, both in the present and in the future.

A few words may be added to expand this triple proposition:

1. It must be recognized that paternal or maternal love is often egotistic, and often blind. We must, therefore, bear in mind that there are certain parents who, under the conditions with which we are dealing, will attempt to dissuade us from the proper line of conduct.

First of all, there are the odious cynics who say to us: "The

nurse is of little importance to us; our child must come before everything; and since it requires a nurse, it matters not what happens to her, for she is paid to nourish our child." We know what reply to give to these, but, for the honor of humanity, I may say that they are rare.

But there are others who, while deploring the risk incurred by the nurse, and admitting that they are culpable, try to satisfy their consciences by the exigencies of the situation, more to excuse themselves than to extort from us the consent which they hope to obtain. "The child is so ill," they tell us; "its life is at the mercy of a nurse. Can we, then, let it die? Should we not try and save it, even by exposing this woman to danger?" etc. Here we must guard ourselves against all sentiment. Our duty is formal, and must be obeyed, in spite of the most sentimental considerations. We have not the right to sacrifice the nurse for the benefit of the child. As we are not permitted to give charity with the money of others, neither can we give charity to their child with health which does not belong to us. Moreover, the law on this point is clear, and certain physicians have been reprimanded severely, under such conditions, for having consented for one reason or another to the continuance of suckling.

2. I will go further, and add that it is still the duty of the medical man to oppose suckling, even when it is consented to by the nurse, after she has been warned of the dangers to which she is exposed.

Sometimes we find a nurse who, having been informed of the nature of the child's disease, has consented to continue suckling. In such cases the woman has been told that there is nothing much the matter with the child, and that, with ordinary care and precautions, all danger can be avoided. Moreover, she is told that she will be well rewarded, etc. A little money and many promises have cemented the agreement, and it only remains to obtain the consent of the medical man to take the responsibility for what may follow.

Under such circumstances it is our duty to refuse our consent absolutely, for the two following reasons: (1) First, because it is doubtful if the nurse has consented with full knowledge

of the facts. She may have been deceived, not as to the child's disease, but with regard to the gravity of this disease and the risks attending it. (2) Secondly, because a contract is only valid according as the nature of the agreement is clearly determined. But how can this nurse be enlightened, ignorant as she is of the risks to which she has consented to expose herself, when we physicians cannot define or formulate these risks? Do we ever know what will happen in a given case of syphilis? How, then, can the nurse be expected to know?

Whether such a contract is valid in law I leave to legal experts to decide, but I maintain that it is not valid in principle, and cannot be considered as moral or honest, for this contract is nothing less than the purchase of the health of a nurse for a little money. This bargain with the nurse is obnoxious to me, and I refuse to cover such transactions with my medical consent.

The legal value of such a contract is nil, according to the opinion which I have obtained from one of our most distinguished jurists, M. Julien Larnac. His opinion is as follows:

The prescriptions of law are in accord, on this question, with the principles of morality and the rules of the medical profession. Even admitting that the nurse has not been deceived as to the nature of the disease in the child or the gravity of this disease, and that she has well understood the dangers to which she is exposed, the contract is none the less marked by a radical and absolute flaw. It is stated in the articles of the Civil Code that things which are not of a commercial value cannot form the subject of a valid agreement, and that those things of which the conveyance would be contrary to the public welfare must be considered as being beyond the limits of commerce. Among these things must first be placed the human person, which is stated by law to be not a negotiable property; and with the human person must be classed the elements which constitute it —first of all life, and afterwards health. It follows from this that the agreement by which one individual promises to another the sacrifice of his health, either gratuitously or for a price, is not binding to either of the contracting parties, and is, in the e of the law, of no value. Still more so is this the case w agreement made between the nurse and the parents o

child under the above-mentioned conditions, the execution of which would endanger, not only the health and perhaps the life of the nurse, but would also expose the man with whom the nurse would have sexual connection and the children which she might bear to the same risks. The whole of society is interested in the suppression of syphilis, therefore all agreements which injure this interest are condemned by the law as contrary to the public welfare. The principles which I have just explained are elementary, and I do not think that the solution which they lead to can be seriously contested. So far as I know, the courts have never had to pronounce upon the legal value of a compact between a nurse and the parents of a syphilitic infant, or upon any analogous compact; but they would not hesitate in condemning it and in pronouncing it as null and void.

We cannot, therefore, accept such transactions between parents and nurses, and we should dissuade both families and nurses from entering into them. We should instruct the nurse with regard to the proposed situation, and the dangers connected with it. We should attempt to convince her that, for the sake of her husband and her future children, she has no right to sacrifice her present and future health. If, in spite of our repeated warnings, the two parties persist in keeping the compact, we must stand aloof from the affair, and avoid compromising our character, by declining all responsibility, before witnesses if possible, in this unwholesome contract.

I have several times found myself in such a situation, and have always remained faithful to the principles which I have just enunciated, either by succeeding in altering the resolution so lightly undertaken by the infatuated parents, or at any rate by refusing to take the responsibility for the results which might follow.

Once only have I departed from this line of conduct, with evil results. Some years ago I was called to attend the child of a celebrity of the demi-monde, affected with severe hereditary syphilis, to which it finally succumbed. I found a wet-nurse, who for six weeks had given the breast to this child, and who, in spite of the revolting aspect of the infant, which was covered with ulcers and scabs, and in spite of our advice, persisted

in suckling the child. I may say, to her credit, that her resistance appeared to be inspired less by the idea of pecuniary benefit than by a sentiment of pity and a quasi-maternal devotion to the child. I employed every argument to shake her resolution, and even gave her a lesson in the pathology of syphilis, in which the prognosis was anything but mitigated. This was all to no purpose, and the woman became more obstinate than ever. Before this invincible obstinacy, and under the special circumstances, I thought I might pass over the matter, but not without a final protest declining all responsibility. The suckling was continued with every precaution to diminish the risk of contagion, but the child went from bad to worse in spite of all care. In spite of careful attention, the nurse was infected with a chancre of the breast, which was followed by severe secondary symptoms. The child died, and the nurse, against our advice, returned home and infected her husband. The husband then came on the scene, and, comprehending the situation, exploited it in a most profitable manner. Thus, the nurse was infected, the husband of the nurse was infected, and the mother of the child was subjected to the perpetual extortion of hush-money. This was the result of the infraction of an absolute principle.

3. Not only is it necessary to formally forbid the suckling of a syphilitic infant by a healthy nurse, but this must also be forbidden *both at present and afterwards.*

If we have had good reason to forbid suckling to-day, the same reasons hold good in a few weeks or months. Even when treated and free from contagious lesions, a syphilitic suckling is none the less syphilitic, and is liable as such to recurrent contagious lesions. It is dangerous both at present and afterwards, and therefore the prohibition of suckling must be extended.

That this rule is not too rigorous is shown by the following case: One of our colleagues was called in to examine an infant which was being suckled by a wet-nurse. He found the child syphilitic, and the nurse so far healthy. Suckling was immediately suspended, and appropriate treatment ordered for the child. Three months later, at a time when the child showed no

suspicious manifestations, our colleague thought that the disease was so much attenuated as to be free from the risk of contagion, and the child was given to another wet-nurse. But fresh lesions developed in the child's mouth, and these lesions infected the nurse. The moral of this is simple, and is well described by the physician referred to in the following words: "Even when the appreciable manifestations in a syphilitic suckling have subsided under the influence of regular and prolonged treatment, these manifestations may reappear at any moment. I have, therefore, to reproach myself for having allowed suckling, believing the child to be cured, and for having neglected the excessive prudence which a physician should never depart from." This case serves as a warning not to depart from the excess of prudence, which is so indispensable and so definitely imposed on the physician in such a case.

Therefore, from whatever side we look at the question, we always arrive at the same result—namely, the necessity of prohibiting suckling in the conditions mentioned above, and the necessity for an absolute prohibition, under pain of the possible accidents for the nurse and the gravest responsibility for ourselves. In this matter we cannot adopt any half-measures. But with regard to these half-measures, there are two which are sometimes proposed to us, and presented with the appearance of useful resources against the difficulties of the situation.

(1) They will tell us that "what we fear most is contagion from the mouth of the suckling to the nipple of the nurse. If this is so, the nurse's nipple can be protected mechanically by some intervening apparatus which will allow suckling, but will isolate the mouth of the suckling from the nurse's breast." This is only perfect in theory, for we have no apparatus of this kind, and the common teat does not give any real protection in such a case. It cannot isolate the nipple, because it is continually moistened with the infant's saliva, and by being perforated leaves a passage for the saliva. More perfect apparatus have been devised, but they are not of much practical use, because the child will not use them. We often have to deal with a feeble, puny infant, who has hardly the strength to suck a normal nipple, much less a mechanical apparatus. We may,

therefore, conclude that there is not much benefit to be derived from any method of mediate suckling.

(2) Another half-measure is *supervised suckling,* which offers no more guarantee than the former method. If the child has lesions in the mouth or nose, every one is agreed that suckling must be prohibited, since the dangers of contagion are obvious. But if there are no lesions in the mouth or in the nasal fossæ, is the same prohibition to be insisted on? Some of our colleagues argue in this way: "Why should the child be removed from the breast in these conditions, when there is nothing in the mouth or in the nasal fossæ, and therefore no possible contagion? If some lesion develops in these places, there is always time to suspend suckling, and suckling may be permitted for the present under supervision." For my part, I am less confident, for the following reasons: First of all there are the practical difficulties of such supervision, which, in order to be carried out thoroughly, require daily examination of the child for an unlimited time. This is onerous both for the family and for the medical man. For many reasons such supervision cannot be always possible. Secondly, however careful it is, this supervision always runs the risk of being insufficient. The mouth of a new-born infant is not so easily examined as the mouth of an adult, and even when it is carefully and patiently examined every day, we can never be sure of not having missed some slight erosion situated on the sides of the tongue, the tonsils, or the floor of the mouth. Moreover, after the mouth there remains the nose, and how can we determine the state of the nasal fossæ?

It is true that cases have been reported in which suckling under supervision was carried out without any accidents, but, on the other hand, this practice has often led to contagion in spite of the devotion and care of the medical men who had imposed upon themselves this task. I have myself attempted supervised suckling and have had to repent it. In the case mentioned above, in which the nurse refused to abandon suckling in spite of my warnings, supervision was carefully carried out, with the result we have seen.

In fact, when we attempt to make compromises with a situ-

ation which does not admit of them, we attain the result which we have aimed at avoiding. For this reason I repeat that the line of conduct in such cases should be invariably regulated by the only rule which surely avoids all chance of contagion—namely, *the absolute prohibition of the suckling of a syphilitic infant by a healthy nurse.*

This being accepted as a basis, we have now to consider the means by which the infant is to be nourished.

Bottle-Feeding.—Feeding by the bottle presents itself as the first resource, and this forms the means of nourishment for most syphilitic infants. It is hardly necessary to say that for all sucklings, even when healthy and free from syphilitic taint, the bottle is a bad method of feeding. It is a method which certainly succeeds in some cases, but it is by common consent an uncertain method, which, for numerous reasons, generally weakens the child, or even allows it to succumb through insufficient nourishment. But in the situation we are dealing with the bottle is more than ever insufficient, and this is shown by examples which are too numerous to mention. I do not say, however, that the bottle kills all syphilitic infants, for I have seen bottle-feeding, carefully administered with aseptic bottles and good milk, succeed in giving sufficient nourishment in some cases. I have many times made use of the method recommended by M. Rollet, which consists in giving the child woman's milk freshly expressed from the breast by means of a spoon or the bottle. This is good as a temporary procedure, but cannot be depended on for prolonged usage. It rapidly fatigues the women, and requires an amount of care and attention which can hardly be expected from a wet-nurse.

However, bottle-feeding, in the majority of cases which I have observed, has not been successful, and infants fed in this way have become weakly, and have succumbed more on account of defective nourishment than because of their disease.[1] Moreover, the results of my personal experience are in accordance with those of many other observers.

Therefore, as the syphilitic infant cannot be given to a wet-nurse, and cannot usually be brought up by the bottle, we have

[1] At the time when this was written *sterilized milk* had not been introduced.

to consider if there are any other means of giving it sufficient nourishment. There are two other expedients by the aid of which the newly born syphilitic infant can be provided with nourishment: (1) Suckling by a syphilitic nurse; (2) direct feeding by a goat.

Suckling by a Syphilitic Wet-Nurse.—If the nurse has previously had syphilis there is little fear of contagion, for syphilis is one of the diseases which only occur once, or, at any rate, is a disease which only occurs more than once very exceptionally. Therefore by giving the suckling to a syphilitic nurse we avoid the risk of contamination for the nurse, and we give the infant a breast to suck, and by this means the syphilitic suckling is restored to the conditions common to all sucklings. This is acceptable in theory, and I do not hesitate to qualify it as excellent in practice. From what I have seen, it is an excellent means of nourishment for syphilitic infants, and I have made use of it myself on several occasions.

We must not expect, however, that such a proceeding will be accepted without repugnance and opposition. Objections of two kinds will be raised against the employment of a syphilitic wet-nurse.

1. We shall first be asked whether the nurse may not communicate her disease to the child. The child already has a disease in its blood, and by giving it to a nurse affected with the same disease may not the virulence of the infection be increased? This is only a prejudice of the lay public, who are not initiated in the medical knowledge concerning the unity of certain diatheses. To this we may reply that the child has nothing to fear from the nurse as regards syphilis. It has syphilis once, and will not have it again, and this nurse can neither communicate a second infection nor increase the dangers of the first.

2. It will also be asked whether a syphilitic wet-nurse has sufficient milk, and whether this milk is not of a bad quality. The answer to this is that a syphilitic nurse may be as good as a woman who is not syphilitic. Everything depends on the choice of the woman. I do not propose that a nurse should be chosen from the class of women who are severely affected by the

disease—anæmic and asthenic women, whose breasts are exhausted by the disease. What I propose is to take one of the fine country girls who have been infected with syphilis on their arrival in Paris, and who still preserve their healthy constitution; or one of those women in whom syphilis takes a mild course, owing to the resistance of their native vigor, and who, in spite of the disease, remain fresh and vigorous, with breasts full of milk.

From many years' experience in a hospital exclusively devoted to syphilitic women, I can affirm that such types of nurses are fairly common. In fact, syphilis, even in women, often respects the general health. Not all syphilitic women are anæmic and broken down in health; there are some who, in spite of the disease, preserve their strength and healthy appearance, and who remain with syphilis what they were before. Why, then, should not such women make good wet-nurses? Moreover, this is proved by experience, and I have many times seen, at the Lourcine Hospital or elsewhere, syphilitic women suckle their infants successfully, in spite of their own disease and that of their infants. Therefore, *a syphilitic woman may be an excellent wet-nurse for a syphilitic infant,* and constitutes the only kind of wet-nurse who can be employed under the circumstances.

But there is a practical difficulty which has to be considered. This is the difficulty in finding a syphilitic wet-nurse at the time when she is wanted. At the Lourcine Hospital I have often had at hand two or three fine syphilitic women who, having lost their own infants, would have been delighted to enter a family as special nurses, and at other times I have had to search for weeks or months without finding one. When we have adopted the course of confiding a newly born syphilitic infant to a syphilitic wet-nurse, we must search actively for this nurse. For this purpose, I may mention the special hospitals, such as the St. Louis and the Lourcine (in Paris), as likely places for a search of this kind.

Suckling by the Goat.—This method consists in direct suckling. It is generally easy to carry out if the infant is somewhat hungry after a fast of several hours. The child takes

the udder instinctively, and the goat is seldom refractory. I once gave a public demonstration of this fact at the Hôtel-Dieu, and presented all the sucklings, syphilitic or otherwise, to a milch-goat, and with rare exceptions the goat and the sucklings got on very well together. In private practice, also, I have several times carried out the same system with successful results.

Sometimes, however, there is resistance on the part of the goat or the child. Sometimes the goat refuses the human suckling, but more often it is the child who resists. The newly born infant, as a rule, takes the goat's udder very well, but older infants, who have already been accustomed to a woman's breast, often refuse the goat with an obstinacy which is not always easy to overcome.

When suckling by the goat can be successfully managed, the results as regards the nutrition of the infant are excellent, and it can tolerate better the treatment for its disease. I have several times employed this method for infants severely affected with syphilis, and it has always been successful. I regard it as the best mode of nourishment for syphilitic infants, and strongly urge its introduction into both private and hospital practice. By this means many syphilitic infants could be saved who perish when fed by the bottle. The only practical difficulty is the expense: the inconvenience caused by the introduction of a goat into the family circle is a secondary consideration. In any case the family should be willing to bear both the expense and the domestic embarrassment for the sake of the life of the child.

The details of suckling by the goat have been carefully studied by Boudard. According to him, the goat, of all the domestic animals, is most suited for direct suckling, owing to the position of the nipples, the abundance of milk, the height of the animal, and its easy domestication. The white Cashmir goat, which has no horns, is the most suitable species. A healthy goat gives on an average 4 or 5 pints of milk daily from the beginning of May to the end of July, which is reduced to about 3 pints by the end of October. From October to January the quantity is reduced to 1½ pints, and when the animal is well nourished with potatoes,

flour, and bran, this quantity is maintained till the end of February, when lactation ceases. In larger hospitals several goats covered at different times will furnish milk for the whole year.

Duties of the Medical Man toward the Wet-Nurse

I have just determined the line of conduct which we should follow with regard to the suckling under the conditions mentioned where we are called in by a family to attend a suckling affected with syphilis which has already been suckled by a wet-nurse.

But the treatment and feeding of the child according to the rules I have just laid down is not all that we have to do. Besides this, there are social duties to fulfill, which are more difficult and more delicate than purely professional obligations. First of all, there is our duty with regard to the nurse—a delicate question, which has been the subject of much controversy, and has been decided in different ways by equally competent physicians. This was the subject of a long discussion which took place at the Medical Society of Lyons in 1868, at which the most divergent opinions were stated.[1] In fact, the questions which present themselves are beyond the scope of our usual studies; but as they have a general interest, and even concern our own interest as medical men, they claim our special attention.

First of all, since we are concerned with questions in which the law may intervene, and with medical duties the omission or transgression of which may bring us before the courts of justice, good sense tells us that we should first examine whether the law on this point determines clearly the obligations which it imposes upon us. But the law is silent on the special points which most concern us, and simply deals with the most comprehensive generalities. It lays down certain principles, leaving each citizen to regulate his conduct according to these principles in each particular case. In fact, it cannot be other-

[1] *Transactions of the Medical Society of Lyons*, 1868, vol. viii. *Vide* also Diday, "On the Responsibility of the Medical Man toward the Suckling and Wet-Nurse." *Ibid.*, Discussion on Congenital Syphilis at the Medical Society of Paris (*Gazette des Hôpitaux*, 1867).

wise, and it is puerile to demand from the law a special clause for each of the numerous situations which are created by chance events.

The situation is this: we have been called in to see a syphilitic infant by a family, and this infant has already been suckled by a wet-nurse.

Now, if we are to strictly observe the rule of medical secrecy, we shall confine ourselves to the treatment of the child without concerning ourselves with the nurse, and without warning her of the danger to which she is exposed. What is the result? The nurse contracts syphilis, and claims damages from us. On the other hand, if, on philanthropic grounds, we warn the nurse of the danger of contracting syphilis from the child, we violate the rule of medical secrecy, and are threatened with an action by the family.

Such is the dilemma in which the medical man finds himself in a situation of this kind. But, if the written law does not guide us on this point, the judgments which have been delivered in such cases throw more light on the subject. The general impression appears to be that medical secrecy is subordinate to the more important duty of protecting the nurse by informing her of the child's disease. In many cases medical men have been reprimanded for neglecting to inform the nurse of this fact.

But this doctrine may lead to deplorable consequences for the family. The nurse may not keep the secret, and may also use her knowledge for the extortion of hush-money. Moreover, I reject this doctrine because, in the majority of cases, this revelation is unnecessary for the protection of the nurse. If suckling is stopped on some pretext or other, this will be sufficient to protect the nurse. She will be no further protected by being initiated into the family secret, and there is no necessity to add to the suspension of suckling a denunciation which will profit no one, and which may cause grave injury to a family.

Therefore, I oppose the doctrine in question because it appears to me illegal; because it admits of the most serious family injury; and because it is generally unnecessary for the

protection of the nurse. But if I reject this doctrine, I do not neglect the interests of the nurse; on the contrary, I regard her protection as essential; but protection only, and not information.

I will explain the line of conduct which I have adopted, after much deliberation, with regard to the delicate questions which we are considering.

Protection of the Wet-Nurse.—It is the duty of the medical man to protect the nurse, but he can only exercise this duty within certain limits, which are those of honesty and legality. He should not exercise it in defiance of other duties which are no less definite. These are the principles; we now come to their application.

To resume the subject at the point where we left off. We have examined the child and the nurse, and we have found the former syphilitic and the latter still healthy. We have now to interview the father, and explain to him the situation. First, as regards the child, we give our diagnosis, and propose suitable treatment and nourishment. Secondly, as regards the nurse, we explain the absolute impossibility for her to continue suckling, owing to the risk of contagion, and the consequences of this contagion, which affect her husband and family. As a matter of diplomacy, we should lay stress on the possible consequences, such as recrimination on the part of the nurse, demands for compensation, action at law, public scandal, etc. None of these details should be omitted, and in the interests of our client we should attempt to cause a certain amount of alarm. This explanation of the state of affairs may end in one of two results:

1. *Protection without Information.*—If we have to deal with a man of honor, he will agree to our proposals, provided that the nature of the disease is not divulged to the nurse, who may spread scandal abroad. In this case the medical man is the master of the situation, and he must simply tell the nurse in a general way that it is impossible for her to continue to suckle the child. Our duty is now fulfilled, and there only remains a pecuniary compensation to be settled between the family and the nurse. By regulating our conduct in this way we have

conferred on the nurse the protection which was due to her without harm to the family, and without violating medical secrecy. This is the system of protection without information.

It may be said that the sudden separation of the nurse from the child is in itself enough to raise the suspicion of syphilis. To this I reply that syphilis is not the only reason for separating a nurse from her suckling. This is done every day for different reasons which have nothing to do with syphilis; it is sufficient for the nurse's milk to be apparently unsuitable to the child. Again, if the nurse guesses the truth, this results from the force of circumstances; her attention may have been drawn to the infant's condition before the suspension of suckling. If she spreads scandal abroad and throws discredit on the family, at any rate, she cannot support her statements by anything that I have said.

On the whole, therefore, in the first order of cases we have attained the essential result which we aimed at—the protection of the nurse; and we have obtained this without recourse to a revelation which constitutes a violation of medical secrecy, and which has the grave objection of putting the family affairs at the doubtful discretion of a wet-nurse.

2. *Rupture with the Family.*—In the second order of cases things are not so simple, and I have already pointed out the resistance we may have to encounter. Sometimes we meet with an absolute refusal to suspend suckling. The parents will say that it will kill the child to remove it from the nurse, and that if the nurse contracts the disease, she can be compensated. They may even reproach us for paying more attention to the interests of the nurse than to the welfare of their child.

Under these strained circumstances we must first of all attempt to persuade them, by explaining the moral aspects of the situation. But if, in spite of our remonstrances, they persist in risking the nurse's health for their own profit, the procedure I adopt is this: to prescribe in writing the treatment for the child, and to add the following appendix: "*Absolute impossibility to continue suckling by the nurse.*" This should be dated and signed. This is necessary to avoid the possible recriminations which may be raised against us in case of future

complications, such as an action for damages by the nurse if she becomes contaminated with syphilis. It is also necessary to point out to the parents that under these circumstances we absolutely refuse to continue to attend the case.

By this means I consider that we have fulfilled our obligations to the nurse as far as possible without violating medical secrecy. I hold that we are bound to this, even in the case of those who do not deserve it, and I should blame any medical man who, even with the most honorable intentions, exceeds the limits of legality in this direction.

Such are the principles which, in my opinion, should direct the medical man in the delicate situations which we have just been studying. On the numerous occasions in which I have applied them I have never had to deplore (except in the special case which I have mentioned previously) either the unfortunate infection of nurses by sucklings, or the distressing scandals which accompany the publicity given by a nurse to the hereditary syphilis of a suckling.

It is by obeying these principles that the medical man will avoid the numerous surprises and dangers with which his path is beset. It is by obeying these principles that he will guard himself from the errors which are sometimes committed by some of our colleagues in similar circumstances, and which remain inscribed in the judicial records. It is by obeying these principles that he will guard himself from allowing a syphilitic infant to be suckled by a healthy nurse, even when she consents, knowing the dangers to which she is exposed; from giving his consent to the culpable practice of a family which, by a cynical calculation, endangers the health of a nurse for the benefit of its child; from choosing for a syphilitic suckling a nurse to whom he proposes to give mercury as a means of treating the child; or from choosing for a syphilitic suckling a nurse whom he will deceive as to the child's disease, and to whom he will administer mercurial treatment disguised under another name.[1]

[1] *Vide* Tardieu, "Medico-legal Studies on Diseases Accidentally and Involuntarily Produced by Imprudence, Negligence, or Contagion, including the Medico-legal History of Syphilis and its Different Modes of Transmission" (*Annales d'Hygiene publique et de Médecine légale*, 1864).

To cite these errors is to condemn them, and there is no need to dwell upon them further, especially as they are easily avoided, since another way is open to the physician which allows him, as I have shown, to confer on the nurse a protection which is nearly always effective; to spare families the scandal of public exposure; and to protect his own interests as a physician, with professional dignity.

The Child is Syphilitic and the Nurse is Infected

We have discussed the line of conduct in the first of the two alternatives—namely, when the child was syphilitic, but the nurse still healthy. We have now to consider the case where the nurse is also infected, and infected in such a way that there is no doubt as to the origin of the infection. This situation is quite different from the one we have just studied. In the first case one of our chief objects was to safeguard the nurse; in the second case the mischief is done and the nurse is infected. What should be our line of conduct under these new conditions?

Theoretically, there are three things to be done: (1) To treat the child; (2) to retain the nurse; (3) to treat the nurse.

Retention of the nurse is the best course to take, for the child, for the nurse, and for every one—for the child, because this is the only nurse which can be allowed; for the nurse, because she cannot be allowed to suckle another child, and because by remaining in the family she can be treated at the same time; for every one else, because the nurse will not convey contagion elsewhere.

The treatment of the nurse is not so simple as it seems, for it may be objected that by giving mercury to the nurse we shall alter the quality of her milk. To this we should reply that a course of mercurial treatment, when properly carried out, neither modifies the quantity nor the quality of the milk, and that, even if it did so, the nurse is a patient, and requires the same attention as the child. To treat the child without treating the nurse would suit the selfishness of certain parents, but such a course must be energetically repudiated.

Theoretically, this is all we have to do, and our duties are

clearly defined, but in practice the situation is full of storms, in which we may become implicated. In fact, it is this class of case which commonly leads to actions at law between nurses and the parents of sucklings. Moreover, the situation abounds in difficulties of all kinds, and has several times been the occasion of unfortunate errors, which some of our colleagues have expiated in the law courts. It is, therefore, necessary to point out the dangers to which the medical man is exposed in these cases, and to attempt to formulate what I regard as the rules to be observed in fulfilling the complex duties which this situation imposes upon us.

The situation is as follows: We have examined a child, and find it affected with hereditary syphilis, and a nurse whom this child has infected. We have then to inform the father of the family concerning the results of our examination. After much lamentation and many reflections, which would have been more to the point before betrothal than after the accouchement, we shall be asked what is to be done in this unfortunate situation. To this I would reply in the following terms:

"As far as I am concerned, I have only one thing to do—that is, to prescribe for your child and for its nurse. As far as you are concerned, in order that I may be useful in the present circumstances, you must do three things—namely, confess, compensate, and, if possible, keep the nurse. You must explain to the nurse the actual situation—the nature of the disease in your child; you must compensate her for having given her syphilis; and, if possible, you must keep her to continue the suckling of your child."

This programme includes three points which it is necessary to examine in detail.

1. *Confession.*—It is on this point that we meet with most opposition on the part of the parents; their dignity and self-respect revolt against such an idea. They will propose certain ways of escaping such humiliation, by treating the nurse without informing her, by giving some other name to the disease, or by administering mercury under some other name, etc. To all such subterfuges we must give our absolute refusal. To dissimulate only adds one evil to another, and complicates a

situation which is already sufficiently involved. Moreover, the nurse may already have her suspicions as to the nature of the disease, and can easily confirm them by a visit to another medical man on the first opportunity. After this she will be doubly incensed, and will increase her claim for damages against the parents. In these cases honesty is the best policy, and we should inform the parents that it is to their interest to do everything they can in order to keep the nurse to suckle their child.

I lay stress on this point because it is here that errors have been committed by some of our colleagues, who have allowed themselves to countenance the detestable system of dissimulation with regard to the wet-nurse. This system compels the medical man to deceive the nurse as to the nature of the disease by calling it eczema, or "heating of the blood," etc.; and to deceive her as to the nature of the remedies by calling them tonic pills, or "pills for the milk," etc. And this is not all, for the nurse, being ignorant of her disease, may spread syphilis abroad when she leaves, either to return home, or to take charge of another suckling.

Lastly, it is of major importance for every syphilitic subject to know that he or she has had the disease, with a view to assisting in the diagnosis of future manifestations, which may otherwise not be attributed to their real cause.

Therefore, this system of dissimulation is immoral, detrimental in its future consequences, and equally compromising for the family and the medical man, and if we are approached by parents to sacrifice our convictions on this point, it is our duty to retire from the case.

2. *Compensation.*—We only concern ourselves in this question in order to attain the object which we have in view—namely, an arrangement which allows the nurse to be retained, for the benefit of the child and for the protection of others. We should point out to the father that it is his duty to compensate the nurse for the injury she has received by the fact of suckling his child. Also, that it is wiser to compensate her at once and of his own accord, in order to avoid the further expense and the public scandal of an action at law. There is

nothing more pitiable than the position of the father of a family in a situation of this kind, and I give the following case as an example:

One of my patients who had contracted syphilis married without having undergone sufficient treatment. He became the father of a child which, when six weeks old, showed signs of hereditary syphilis. I was called in to examine the child as well as the nurse who had suckled it. Before the word "syphilis" had been mentioned, the nurse, suspecting the state of affairs, gave way to violent recriminations, made a scene, and left the house. Two hours later a man called on my client and showed a procuration from the nurse claiming an indemnity of twenty thousand francs. This was naturally refused, but the same evening a writ was served demanding damages of ten thousand francs for the woman "who was affected with a venereal disease called syphilis, after having suckled the child of Mr. X., whose blood was vitiated by the said disease," etc. This writ was served in an open way, without any envelope, and was deposited in the porter's lodge, where it was read by many persons, and caused much joy among the servants of the house!

3. *Retention of the Nurse.*—This is the most essential point, and also the most difficult. It is to attain this end that we have tried to make our client accept the two first points of our programme.

If the nurse agrees to continue suckling, all may be arranged for the best in the interests of everyone. On the one hand, the suckling of the child will not be compromised, and we know how important a wet-nurse is for the bringing up of syphilitic infants; on the other hand, this nurse will not carry her disease elsewhere. However, if the nurse refuses to stay, all the inconveniences and dangers arise which I have already pointed out. The child must be brought up on the bottle, or recourse must be had to the goat or the syphilitic wet-nurse, both of which are often unobtainable. In the second place, the nurse will either return home and infect her husband, or will look out for another suckling, to whom she will probably transmit the disease. Therefore, from whatever point of view we

look at the question, it is of major importance to retain the nurse.

As a matter of fact, the infected nurse usually abandons her suckling, and the parents know this so well that their first reply to our proposition is that, if the nurse is informed of the nature of the disease, she will not consent to remain. Rupture between the parents and the nurse is therefore the usual result, and is due to the force of circumstances.

Sometimes the rupture is caused by the procrastination of the parents, who hesitate to follow our advice, and end in adopting a course of silence and dissimulation. The nurse then usually learns the truth from other sources, and threatens an action for damages. In exceptional cases, the parents will actually accuse the nurse of having given the disease to the child.

At other times the rupture comes from the nurse, who, frightened by the symptoms which have appeared in the child, will take her departure before the doctor appears on the scene. But more commonly she retires after having been informed of the state of affairs, and refuses to continue suckling, in spite of all the promises of the family.

This is a result to be deplored, because it profits no one, and does harm to everyone—a result which might have been avoided if the two parties had been better advised as to their own interests. It is in such situations that the rôle of the medical man may be useful, by sparing no pains to induce the parents to take the line of action which I have just explained, and by using his authority over the nurse to persuade her to accept the conditions, for the sake of everyone concerned and for the sake of her own family.

Duties of the Medical Man Toward Society

We have next to consider the duties of the medical man toward the protection of society, as far as is possible, from the dangers which may recoil on it from the syphilis of nurses and sucklings.

Without exaggeration, we may say that syphilis of nurses

and sucklings is as frequent a source of contamination as it is lamentable. There is no warning against this form of contagion, as there is in the case of syphilis of venereal origin; a nurse or suckling are not suspected like a prostitute. Consequently, contagion arising from an infant or a nurse only occurs with the greater facility, and generally attacks innocent persons. This is *par excellence* syphilis of the innocent, or *syphilis insontium.*

Contagions of this kind abound. Sometimes it is a syphilitic suckling which contaminates several successive wet-nurses; sometimes it is a wet-nurse who, leaving a syphilitic suckling which has infected her, transmits in turn the infection to another nurse. Then there are the cases where contagion thus received is disseminated by a series of *ricochets*—for example, an infected nurse infects her child, and this in turn transmits the infection to another nurse; or the husband of a wet-nurse infected from a suckling contracts syphilis from his wife; or a nurse who, having given the breast to an infant suckled by one of her comrades, receives syphilis from this child, and transmits it to her suckling, etc.

I will give a few examples from actual practice.

1. The following case is an example of a family epidemic of syphilis, with seven victims, caused by the introduction of a syphilitic wet-nurse into the family:

A child was born in March, 1872, of young and healthy parents, free from any venereal affection. Although it was a seven and a half months child, an attempt was made to bring it up by the bottle, but after a month this was changed for a wet-nurse. A fine girl with plenty of milk was chosen to suckle the child toward the end of April. For five or six weeks all went well, but after this time the nurse developed rose-colored spots on the chest and small painful erosions about the nipples. These lesions were at first regarded as cracked nipples, which are common in suckling women. The child, which had been hitherto healthy, now began to waste, and developed sores in the mouth. An eruption of red scaly papules then appeared on the body, erosions developed on the buttocks and scrotum, and ulcers formed on the lips and in the mouth.

A medical man was then called in, and diagnosed syphilis in both nurse and infant. After this, the nurse took her departure, and it was afterwards found out that she had been treated for syphilis at home, and that her child had died of the disease.

The child infected by this woman remained ill for a long time, but improved under specific treatment. I saw it for the first time in January, 1874, when it showed undoubted syphilides on the lips and tongue. These lesions disappeared under further treatment, but in 1886 periostitis of the tibia developed, which was cured by iodides.

So far there is nothing extraordinary in this history, for, although infection of the suckling by the nurse is much more rare than infection of the nurse by the suckling, it is sometimes seen in practice. But the *ricochets* from this contamination caused the infection of four persons who attended to this child—the mother, the grandmother, and two girls.

In November, 1872, the mother contracted a chancre of the lower lip, caused by fondling the child, which at this time presented sores in the mouth. The chancre was followed by secondary syphilis, and toward the end of 1874 a further pregnancy ended in abortion at five and a half months. Later on, in 1878, after prolonged treatment, a third pregnancy resulted in the birth of a healthy child, which showed no signs of syphilis up to the age of eight years.

The grandmother appears to have contracted syphilis about the same time as the mother of the child. In November, 1872, she suffered from ulceration of the mouth, followed by confluent syphilides, headache, alopecia, etc. This lady absolutely refused mercurial treatment, and only consented to take iodide of potassium, and later on Gibert's syrup, with the result that she had numerous recurrences, and afterwards suffered from cerebral syphilis.

As to the two girls, it is probable that they also contracted syphilis by buccal contagion, but this was not determined with certainty. At any rate, they developed secondary syphilis at about the same time as the child's mother. These girls were examined by me, and found to be virgins, and it is improbable

that they contracted syphilis in any other way than from the child, whom they often fondled.

Lastly, the husband, who had been warned of the infection of his wife, and of the danger in continuing to cohabit with her, after abstaining for a time, yielded to youthful ardor at the time when his wife was suffering from secondary symptoms. Naturally, he developed a chancre on the penis, which was followed by secondaries.

To resume: A syphilitic wet-nurse introduced syphilis into a family by infecting the suckling which was confided to her; from this infant syphilis spread to four persons who took charge of it; the mother infected her husband; she also became pregnant and aborted. Therefore, six contaminations and the death of a child resulted from the contagion introduced into the family by one nurse.

2. A child a few days old was received into a foundling hospital. Being apparently healthy, it was confided to a wet-nurse, whom it soon infected. This nurse, who was suckling another infant at the same time, infected this child, which soon died. She took a third infant, which also contracted syphilis and died. Another nurse, having given the breast three or four times to the last child to oblige the other nurse, contracted syphilis from it, and also infected her own suckling. Here, then, were five contagions and two deaths.

3. Another example is cited by Dron: A syphilitic infant infected its nurse. The latter, to relieve her breasts, gave them to three sucklings, all of which contracted syphilis. Each of the three infants infected its mother, and each of the mothers infected her husband. The total was, therefore, ten contaminations resulting by *ricochet* of syphilis from a suckling.[1]

4. Sometimes the number of victims is still greater, and Ricordi mentions cases where a suckling gave origin to sixteen, eighteen, and twenty-three cases of syphilis, creating a sort of local epidemic.[2]

These examples, and others which I might add, show the

[1] Dron, "Mode particulier de Transmission de la Syphilis au Nourrisson par la Nourrice dans l'Allaitement." Lyons, 1870.

[2] Ricordi, "Sifilide da allattamenti e forme iniziali della sifilide." Milan, 1865.

importance for society in guarding against the possibility of such contagions, and it is the duty of the medical man to take steps against their occurrence. Also, the public must be blamed for their carelessness in confiding their children to the first nurse who presents herself, without inquiring into her health or the state of the infant she has just left.

Since syphilis of wet-nurses and sucklings admits of such dangers, it is the duty of medical men to endeavor to prevent contagions of this kind. But how is this social duty to be performed? Without entering into the subject of measures of general prophylaxis, which would take us too far from our subject, let us see what we can do when we find ourselves in one of the situations which we have just been studying.

Preventive Measures against Syphilitic Sucklings.—As far as the suckling is concerned, our conduct is clear. As I have already pointed out, it is the duty of the medical man to strongly oppose the suckling of a syphilitic infant by a healthy wet-nurse, either immediately or at a future date.

It would undoubtedly be still better if we could prevent even the possibility of a syphilitic child ever being confided to a healthy nurse. But, does a syphilitic husband always consult us as to whether his still unborn child may or may not be suckled by a nurse? Does he always confide to us, during his wife's pregnancy, the special antecedents which may cause alarm as to the health of the fœtus? Far from this, most of our clients, as soon as they are married, forget their bachelor escapades. The past no longer exists, and is obliterated by the sacrament of marriage. The doctor who attended them for their syphilis is not imprudently admitted to the domestic hearth, and the family doctor, who may possess the confidence of the wife, is not initiated into the mysteries of the former life of the husband. Therefore, for one reason or another, we are only exceptionally appealed to for advice on the question of future suckling. We are only consulted after the child is born, and has been suckled by a nurse, who may already have been infected. This, however, does not prevent us, in the rare cases where the possibility presents itself of intervening in time, from being under the obligation to use all efforts in preventing suck-

ling by a healthy nurse of an infant likely to be born syphilitic.

To attain this object, we must explain the situation to the father—that the child is liable to hereditary syphilis; that if it is born syphilitic the mother will in all probability be infected; that in these conditions the child should not be confided to a wet-nurse; and that, consequently, it is obligatory for the mother to suckle her own child. We are still more justified in adopting this course if the mother already presents signs of syphilis during pregnancy.

This line of conduct responds to all requirements:

1. If the child is born healthy, and not syphilitic, the mother has evidently nothing to fear from it.

2. If it is born syphilitic, the mother in the great majority of cases is already affected before confinement, and consequently has nothing to fear.

3. If the mother of a syphilitic infant appears to have escaped infection, according to Colles' law, she never contracts syphilis by suckling her syphilitic infant. On this point Colles remarks: "It is a curious fact that I have never witnessed nor ever heard of an instance in which a child deriving the infection of syphilis from its parents has caused an ulceration in the breast of its mother."[1] If there are exceptions to this law, as has been stated, they must be extremely rare, and, for my part, I have not yet observed a single authentic case.

However, we must not expect that our advice to the mother to suckle her infant will be always accepted without opposition. Without mentioning selfish excuses depending on the exigencies of modern life, it will often be objected that the mother is too feeble to suckle. It is seldom that a woman is too feeble to suckle her child—at any rate, for a time—and we must insist on her doing so for the first few months at least, and for the reason that hereditary syphilis nearly always manifests itself in the first two or three months. Out of one hundred and fifty-eight cases observed by Diday, symptoms occurred within this period in one hundred and forty-six. Such figures speak for themselves, and require no comment.[1]

[1] Abraham Colles, "Practical Observations on the Venereal Disease," 1837.
[1] "Traité de la Syphilis des Nouveau-nés," 1854, p. 164.

Therefore these few months of maternal suckling may serve as a criterion for the health of the child and a guide for future conduct.

1. If in a certain time syphilis shows itself in the child, it must be treated like all syphilitic infants, and cannot be confided to a wet-nurse. In this case either the maternal suckling should be continued if the mother is syphilitic, and if her strength allows her to continue, or, if there is no sign of syphilis in the mother, we may have recourse to one of the special methods of suckling which I have previously mentioned.

2. If, on the contrary, after three or four months' observation no sign of syphilis appears either in the child or the mother, there is a presumption (I say nothing more than a presumption) that the child has escaped the hereditary influence. In this case we have more freedom of action: on the one hand, the maternal suckling may be continued, with or without assistance from the bottle; on the other hand, a wet-nurse may be allowed.

If such precautions were, or could be, always taken with regard to sucklings infected or suspected of syphilis, the number of contagions derived from this source would be diminished in a considerable proportion.

In the Paris hospitals, when a mother is admitted with an infant at the breast, and is obliged, owing to her illness, to suspend suckling, a wet-nurse is provided for the child. But on several occasions the wet-nurses have been infected with syphilis, and have brought an action for damages. This has resulted in the demand for a double medical certificate on the part of the authorities to certify that no sign of syphilis has been discovered in the mother or child before providing the latter with a wet-nurse.

Preventive Measures against Syphilitic Wet-Nurses.—We have now to consider how contaminations derived from the wet-nurses can be avoided, and here we have two orders of cases to deal with.

1. *Both Child and Wet-Nurse have Signs of Syphilis.*—In this case our line of conduct is traced by the system which I have already developed—namely, to endeavor to *retain the*

nurse. By this means the nurse will not spread contagion in her own family or to other sucklings. From the prophylactic point of view this measure constitutes the best protection for society.

But if the nurse takes her departure from the house we have failed in our object. It is true that we can refuse to give her a certificate, but this is no guarantee for society. As a matter of fact, however, if a nurse leaves her suckling, it is generally to bring an action at law, and the publicity thus obtained will prevent her finding another situation.

2. *The Nurse has no Signs of Syphilis.*—The situation is here quite different, and in this order of case a special point arises which is still but little known, but very essential. This point is that *the nurse may be in the incubation period of syphilis.*

In a special research on this point I have, I think, demonstrated that the incubation of syphilis often exceeds the duration which is usually stated, and that sometimes it is considerably prolonged. My conclusions were: that this period is generally more than three weeks, often four or five weeks, and sometimes six weeks. In one case it exceeded eight weeks.[1]

Therefore, when we examine a nurse for the first time who is suckling a syphilitic infant, it is possible that our visit may be made during this period of incubation. Hence we may find her healthy at first, while in a few days or weeks we may have to declare her as syphilitic. The dangerous consequences of this are obvious. If after our first examination of the nurse we give her permission to suckle another child, she may develop a chancre of the breast while suckling this child, and infect it with syphilis.

This danger is not theoretical, as has been stated, for numerous observations have been recorded which establish in the most definite manner the fact that *the chancre may only appear in the nurse some time after cessation of suckling.* Thus, a nurse ceases suckling for one reason or another, and remains healthy for a certain time. Then she develops (without fresh contagion) a small erosion on the breast, which develops into a chancre with axillary adenopathy, and is followed by constitu-

[1] "Resêrches sur l'Incubation de la Syphilis," 1865.

tional syphilis. This is a possible fact, and a fact which has been observed a number of times in practice.

The interval of time between the last contact of the suckling with the breast and the first sign of the chancre has varied in the observations which are at our disposal from three days to a month. Therefore, if the medical man is ignorant of the antecedents of the case, he will regard the nurse as healthy during this interval. A case in point is recorded by Dron: A nurse suckled a syphilitic child, which died. She took another suckling soon afterwards, after having been reported as healthy by medical examination. She soon, however, developed a chancre, and infected the second child.[1]

Thus a woman, destined to become contagious in a few days or weeks, may present herself to-day as a wet-nurse in a family with all the appearance of perfect health. Moreover, this woman may be declared to be healthy after the most careful medical examination. It is only the knowledge of the antecedent circumstances which leaves the nurse open to suspicion, but these antecedents are not always known, or even possible to ascertain. As a rule, when engaging a wet-nurse, no inquiry is even made as to the health of the last child which she suckled.

I have observed several instances in which a wet-nurse, after suckling a syphilitic infant and being passed as healthy by a medical examination, had been engaged to suckle another child and had developed a chancre of the breast a few days or weeks later, and infected this child. A whole series of cases of this kind have been collected by Dron, of which the following is a good example:

A wet-nurse suckled a syphilitic infant for six weeks, after which she left. Fifteen days later, and having no sign of excoriation of the breast, she obtained another situation. Four days afterwards she presented two chancres of the breast, and was ordered to suspend suckling. The suckling, fifteen days after being separated from the nurse, developed two erosions on the tongue and lip, which were diagnosed by Diday as syphilitic chancres.

[1] Dron, "Mode particulier de Transmission de la Syphilis au Nourrisson par la Nourrice dans l'Allaitement," 1870.

Such cases, although they appear surprising and almost improbable, are nevertheless in accordance with the laws of evolution of the disease. What appears unusual is only due to the nurse being in the state of incubation at the moment when she commences suckling the second infant. Although healthy in appearance, she is none the less in a condition of latent syphilis, which is subsequently revealed by the appearance of a chancre on the breast.

We may sum up as follows:

1. *A priori,* theoretically, syphilitic contaminations of the kind we have been considering may occur, because they conform to the general laws of the disease.

2. *A posteriori,* from experience, contaminations of this kind are produced, and are far from rare. The natural deductions are:

(*a*) That a nurse who has just left a syphilitic infant is one open to suspicion, and one to whom it is dangerous to confide a healthy child.

(*b*) That, before allowing this nurse to suckle another child, she should be kept under observation for a certain time; that the minimum time should not be less than a month, and, as a matter of prudence, it would be better to fix it at five or six weeks.

These precepts being formulated, we have now to consider how we can carry them out in practice. Our duty to society requires that we should prevent all risk of contagion from this nurse, who, although healthy in appearance, may be infected with syphilis. The only means at our disposal is to retain the nurse in the family for a certain period, and at the same time to suspend suckling. In this way only can she be kept under observation. This is very simple theoretically, but not so easy in actual practice; for, on one hand, we must tell the family that under the present circumstances it is impossible to continue suckling by the nurse on account of the danger of infection from the child, and, on the other hand, we propose to the family to retain the nurse whom they require no longer. This contradiction is inexplicable to the public, who are not acquainted with the secrets of the incubation period. It is necessary for

us to explain that the nurse may have contracted syphilis from the child, and should be retained in order to avoid the possibility of her conveying the infection to another child, and to avoid the scandal and pecuniary indemnity which may result. We may also recommend that the wet-nurse be retained in the capacity of an ordinary nurse for the child at the same rate of wages. I have seen many cases of this kind, and have found that this plan succeeds in most cases.

If, however, the nurse refuses to remain for some reason or another, some excuse must be found to obtain a delay of four or five weeks, during which time she may be supervised. In such circumstances the nurse often makes it an express condition for her consent "that her milk shall be preserved" for the time when she leaves to take another suckling. To preserve the milk of a woman who is separated from her suckling is not always easy, but it may be attained by the use of a breast-pump, or, better still, by suction by a young animal. I once found myself in a situation of this kind. A nurse, for whom I had legitimate fear of contagion, wished to leave on the day on which I suspended suckling, and was only induced to remain on condition that her milk was preserved. For six weeks she gave the breast to a puppy, and at the end of this time she preserved her milk, and no sign of syphilis having appeared, I allowed her to depart in safety for herself and for others.

Lastly, if the nurse obstinately insists on taking her departure, there is only one course to take. This is, with the consent of the family (which can always be obtained by explaining the dangers of silence in such a case), to warn the nurse of the situation, to explain the impossibility of her suckling another child—at any rate, for a certain time—and to make her understand the responsibility which rests on her if she spreads contagion. To instruct and warn the nurse in such cases is an absolute duty which must neither be shirked by the family nor by the medical man.

Wet-Nurses in the Incubation Stage of Syphilis

We have next to consider the situation where a wet-nurse in the incubation stage of syphilis has already begun to suckle a healthy child. Under these circumstances the medical man, when called in, may find one of two things.

1. *The Child is already Infected.*—In this case the nurse is found to have developed a chancre of the breast, and the child a chancre in the mouth or on the face. The course to be adopted here is simple—namely, to treat both patients, and to *continue suckling by the same nurse,* for it is obvious that it cannot be suckled by any but a syphilitic wet-nurse, as I have previously pointed out. We should, therefore, do all in our power to retain this nurse in spite of the objections of the parents, for this is the best means of nourishing the child.

2. *The Child is Apparently Healthy.*—In this case the nurse, as before, is found to have a mammary chancre, but the child so far has no sign of the disease. Under these circumstances I am strongly of opinion that *suckling should be suspended,* for although the child has had every chance of contracting the disease, and may be in the incubation period, on the other hand, it may have escaped contagion. Therefore, if it has not yet contracted syphilis, we have no right to allow it to run the risk of contagion by continuing suckling.

Moreover, the contagion of syphilis is not necessary, and many people escape infection under various conditions. The proof of this is that several men have been known to have had connection with the same syphilitic woman at the same time, with the result that some contracted the disease, while others escaped. Again, syphilitic sucklings do not always infect their nurses, and *vice versâ.* Lastly, I have seen an experimental inoculation from a chancre remain sterile in the case of a medical man who, in the cause of science, inoculated himself. He was inoculated from a syphilitic chancre, which was chosen for the purpose by Ricord, and for some unknown reason no effect was produced.

Therefore, for these reasons, it appears to me right to sus-

pend suckling in the conditions we are dealing with, even if it is too late. The child must be fed by the bottle, and we must await the course of events. It is impossible to give the child to another wet-nurse, for, although apparently healthy, it is in all probability in the incubation stage of syphilis.

If the child develops a chancre, it comes into the category of syphilitic sucklings, and must be brought up in the same way as syphilitic infants—by the bottle, or by a syphilitic nurse, or by an animal.

If, on the contrary, it has had the good fortune to escape contagion, it is a healthy suckling, which can be brought up like other infants. The question then presents itself, *When can it be given to a wet-nurse?* This calculation must be based on the maximum duration of the incubation period of syphilis—that is to say, *six or seven weeks.* If nothing has appeared after this time, the child may be regarded as having escaped infection, and can be suckled by a healthy wet-nurse.

The ideal practice is to suspend suckling temporarily, and to resume it with the same nurse, in case the infant is infected, when it has then nothing further to fear from this nurse. With this view, an attempt should be made to induce the family to retain the nurse, who may render useful service in a short time. During this time the function of lactation should be maintained by giving the nurse a puppy to put to the breast. This animal makes an excellent suckling, relieving the breast of milk, and maintaining the secretory function of the gland. This procedure, in my opinion, is preferable to the breast-pump. By this means suckling can be suspended while the nurse is dangerous to the child, and can be resumed later on if the child develops syphilis.

The remedies against the disasters which arise from employing a wet-nurse in the incubation stage of syphilis are two in number:

1. To choose a nurse who has only suckled her own infant, and to examine both nurse and child.

2. To demand from every nurse who has suckled an infant a medical certificate stating that this infant was free from any

contagious disease, and that no nurse should be admitted to a registry-office for nurses except with such a certificate.

The present time is a propitious occasion for such a reform. We live in an age when much attention is paid to all things concerning the public health, and when it is beginning to be understood that it is useful to defend ourselves against disease by measures of public prophylaxis. Measures are taken for the isolation of infectious diseases and for the disinfection of dwellings; the public food is supervised by the municipal laboratory; and certain contagious diseases are warded off by antisepsis, ventilation, disinfection, attention to drains, and purification of water.

Why, then, do we neglect precautions against one of the gravest diseases which, if not abolished altogether, could be considerably attenuated? Why do we not attempt to throw off the yoke of syphilis, and relieve our citizens from part of the heavy tribute which they pay to this formidable scourge? Why do we not struggle against the ever-increasing tide of syphilis by measures of public prophylaxis? These measures have long been claimed by common sense, and they will be welcome on the day when they protect the public health.

Therefore, let us not lose the opportunity of drawing the attention of the public authorities to one of the modes this disease assumes: that is by attacking a class of victims who are the most innocent of all—young infants, who, above all, should be protected against an infection of this kind.

As a résumé of the preceding exposition, we may conclude as follows:

1. Sucklings are sometimes the victims of syphilitic contagion derived from wet-nurses infected by other sucklings to whom they have previously given the breast.

2. The medical examination of these nurses only furnishes an illusory guarantee, because, by reason of the laws of syphilitic incubation, the disease may be latent at the time when this examination is made.

3. The only guarantee which can preserve the public health against the special danger of nurses in the incubation period of syphilis is a medical certificate attesting the state of immu-

nity of the last suckling to which the nurse has given the breast.

4. Therefore, no wet-nurse should have her name entered in a registry-office for nurses except with such a certificate.

I am not under the illusion that this measure would protect all sucklings against syphilitic contagion derived from wet-nurses, but, at any rate, it would protect a certain number.

CHAPTER XXXIII

UNDER WHAT CONDITIONS SHOULD WE ALLOW OR REFUSE A WET-NURSE TO THE CHILD OF A SYPHILITIC FATHER?

THE following question often presents itself in practice: A child is about to be born, or is already born, by a syphilitic father, the mother, for the sake of simplicity, being presumed to be healthy. Can this child be confided to a healthy wet-nurse without danger for this nurse?

The answer to this question depends on the estimation of the power of hereditary transmission of the father's syphilis. The problem is, therefore, that of *paternal heredity,* a subject which has been much disputed, and even denied, and is still beset with uncertainty and obscurity.

In any case, however, it is the syphilitic condition of the father with which we are concerned in deciding whether it may be dangerous or not for the child. There are five conditions which allow us to believe that the syphilis of the father is so attenuated as to be free from hereditary danger.

1. *The Absence of Actual Syphilitic Lesions* at the time when this question arises. This primary condition is obvious, and requires no further discussion.

2. *The Age of the Paternal Syphilis.*—This is a condition of capital importance. It has been established by experience that time constitutes a corrective for the hereditary influence of syphilis on the fœtus. By time this influence is attenuated and finally annihilated. Numerous evidences of this will be found *in extenso* in my book on "Syphilis and Marriage."

I could mention hundreds of cases where syphilitic subjects, in spite of being only imperfectly treated, have had the good sense not to marry till long after the onset of their disease,

and have had healthy children. More significant still are facts showing the progressive attenuation exercised by time on a series of pregnancies. The heredo-paternal influence commences by killing the fœtus, which is expelled as an abortion, or later on as a still-birth; then a child is born at term, but weakly, and destined to early death; then a syphilitic child is born, but one which is capable of resisting the disease; finally, a healthy child is born, free from syphilis. I will give two examples:

(1) One of my patients married in spite of syphilis, which was negligently treated. His wife remained unaffected, but became pregnant four times, with the following results: the first pregnancy ended in abortion at three months; the second in abortion at six months; the third in a syphilitic child which died in three months; the fourth in a healthy child.

(2) Hutchinson reported the following case: A medical man contracted syphilis, and was treated for about six months. Thinking himself cured, he married three or four years later. His wife remained healthy, and became pregnant eleven times. The following series of results throws the progressive attenuation of the disease under the influence of time: The first and second pregnancies ended in still-births, the third in a syphilitic infant which soon died, the fourth in a syphilitic child which also died of the disease; the seven remaining pregnancies resulted in healthy children.

Thus, the question of the age of the paternal syphilis is predominant, and we may say that, with recent syphilis, there is great danger for the child, but with syphilis of older date the hereditary danger diminishes in proportion to the length of time, and may finally disappear altogether.

3. *The Quality of the Paternal Syphilis.*—This is of much less importance than the preceding condition, but nevertheless merits attention. If the disease has been benign, and limited to a few superficial lesions, with no recurrences, and if it has been amenable to treatment, these are conditions of good omen, showing that the disease has not impregnated deeply, and may not have a severe hereditary influence. The presumption is quite different in the case of severe syphilis. This is not a

theoretical idea only, but is the result of observation and experience.

4. *The Length of Time between the Last Specific Manifestation in the Father and the Time of Conception.*—It is a matter of common observation—(1) that an infant conceived at or near the time of a syphilitic eruption is gravely menaced by hereditary syphilis; (2) while an infant conceived a long time after the last manifestation of the disease has every chance of escaping the hereditary influence. The longer this period of immunity, the greater is the chance of a healthy child. This stage of immunity is evidence of the non-activity of the disease, and is a relative guarantee of security for the child.

5. *The Treatment Undergone by the Father.*—This is the most important condition of all, and it may be stated as an axiom that a child born of a syphilitic father who has been treated methodically and for a long period has every chance of escaping specific heredity, while the child born of a syphilitic father who has been insufficiently treated courts the numerous and divers dangers of specific heredity. It is, therefore, necessary to inquire by what remedies and in what manner the father has been treated, and how long he has been submitted to the influence of mercury. Also, inquiry should be made as to whether he has been treated shortly before conception, for we know that even the temporary influence of specific treatment is sometimes sufficient to temporarily prevent the effects of syphilitic heredity.

Such are the elements which serve for the solution of the problem before us, and determine in a given case whether we are justified or not in confiding to a wet-nurse the child of a syphilitic father. The five preceding considerations are not of equal value, and the two which predominate are the age of the disease and the quality of the treatment. Time and treatment are the two great correctives of syphilitic infection.

We now come to the practical application of these considerations. We are concerned with a man who is syphilitic, whose wife is pregnant, who asks us if he can safely confide his child to a wet-nurse. To this we must reply by yes or no, for there

is no third course. We must examine this man with a view to determine whether his syphilitic state still admits of hereditary dangers by means of the five considerations stated above, and formulate a reply in accordance with the results of this inquiry.

It is not always easy to come to a conclusion concerning this question, for we have to deal with a complex problem, the elements of which are very variable, and each case must be decided on its own merits. But if the difficulties are real, they are not insurmountable, and experience shows that, however dissimilar cases of this kind may be, they can be arranged by the force of circumstances into three groups: (1) A group in which we are justified in replying to the question in the affirmative; (2) a group in which we must reply by a formal negative; (3) a group in which it is impossible to give either an absolute negative or affirmative reply.

1. In the first order of cases everything is in favor of the child, in consequence of the hereditary risk being reduced to a minimum. For example, examination of our client shows that he is healthy at the present moment; that he contracted syphilis, say, ten years ago; that the disease has remained benign; that it has shown no symptoms for eight or nine years; and that it has been well treated. In short, in this case all the conditions of the programme which I have presented as a test in such matters are favorably fulfilled. Therefore, the child will be born healthy, and will not infect its nurse; consequently, we can reply that the child may be confided to a wet-nurse.

This line of conduct is adopted by nearly all our colleagues, but there are still a few who refuse absolutely to confide a child born of syphilitic parentage to a wet-nurse, in the same way that they consider that marriage should be forbidden to every syphilitic subject. No doubt this is an easy way of settling medical questions by principles of a transcendental nature, but this procedure settles the questions without solving them. Moreover, it remains to be seen whether this is not more prejudicial than useful, and whether patients would not be better pleased with less severe solutions based on clinical observation.

This is exactly the case; in the same way that observation has established that a syphilitic has the moral right to marry when he has ceased to be dangerous to his wife and children, so has it been shown by thousands of facts that it is safe to confide to a wet-nurse the child of a syphilitic father in whom the disease has lost its power of hereditary transmission.

2. The second order of cases is constituted by an assemblage of conditions which are exactly opposite to the above. In this case we find that our client has contracted syphilis recently, say within two years, that the symptoms and signs have been numerous, that manifestations have appeared a short time before conception, and that treatment has been neglected or incompletely carried out. In such cases we must reply by a formal negative, because the child runs the greatest risk of being born with hereditary syphilis, and will probably infect the wet-nurse. It is therefore the duty of the medical man in these conditions to refuse a wet-nurse for the child.

3. The third order of cases includes those which are less simple. For example, the syphilis of the client is of three years' date, and has been neither benign nor severe—the last symptoms appeared about a year ago. Treatment has been of medium quality—that is to say, the same that most people follow who carry out treatment conscientiously for the first few months and afterwards neglect it, except when actual symptoms appear.

In these conditions the future of the child is absolutely uncertain. It is possible that the child may be born healthy; in fact, it is quite common to see syphilitic fathers, who have had an average attack of syphilis and have only undergone average treatment, procreate children who are free from the disease. But the inverse is equally possible, and on the whole we may sum up that there are many chances in favor of the child's immunity and some chances against it.

Under these circumstances, I maintain that the child should not be confided to a wet-nurse because there is a certain amount of risk. In spite of the probability of the birth of a healthy child under these conditions, we have no right to expose a wet-nurse to the possibility of syphilitic contamination.

My formal conclusion is as follows: *In all cases in which there is the least uncertainty as regards the safety of the wet-nurse, the prohibition of suckling is a rule of conduct which is imposed upon the medical man—I may even say a duty from which he should not depart.*

CHAPTER XXXIV

VACCINAL SYPHILIS[1]

It has been said that the whole prophylaxis of vaccinal syphilis lies in the suppression of human vaccine and the substitution of animal vaccine. This is true, but always with one exception, which I shall first of all point out.

Operative Contamination.—Even with animal vaccine the operation of vaccination may be a cause of syphilitic infection by the use of an instrument previously soiled by the syphilitic virus. But the rôle of the lancet as an intermediary agent in the inoculation of syphilis is not limited to this. In vaccination " in batches," as practiced in schools, hospitals, regiments, etc., the transmission of syphilis may take place from one vaccinated person to another by means of a lancet which is irreproachable in itself. The vaccinifer may be perfectly healthy, but if one of the individuals to be vaccinated is syphilitic, the lancet may be contaminated by this individual, and if not sterilized, may transmit syphilis to others of the patients. That this is not an imaginary hypothesis is shown by the following observation made by R. W. Taylor:[2]

Twenty persons were vaccinated at the same sitting by vaccine from tubes. A child of seven months, healthy and born of healthy parents, was vaccinated eighth. Immediately before it a prostitute was vaccinated who, as it was shown later, was affected with secondary syphilis. From this woman the lancet was carried directly to the child, for the vaccinator passed hurriedly from one subject to another without cleaning his

[1] The points concerning the authenticity of vaccinal syphilis, the epidemics of vaccinal syphilis, the different forms of vaccino-syphilitic inoculation, the pathogeny, diagnosis, etc., are dealt with in my "Lessons on Vaccinal Syphilis," edited by Portalier, Paris, 1889. In the present volume I deal only with the prophylactic side of the question.

[2] *Archives of Dermatology*, April, 1876.

instrument. Twenty-three days later a papulo-erosive lesion appeared at the seat of vaccination in one of the child's arms. This developed into a chancre, and was followed by secondary syphilis in forty-six days.

Another case is reported by Ory,[1] concerning a hospital nurse who contracted syphilis from vaccination with calf-lymph. This woman was vaccinated immediately after a child which was afterwards found to be syphilitic, and the vaccinator, being pressed for time, neglected to clean his lancet. A chancre developed at one of the punctures, and was followed by secondary syphilis.

A third example occurred in the practice of Lorain. Several women were vaccinated at the same sitting with calf-lymph. The needle used was not sufficiently cleaned in passing from one patient to another, and the last patient inoculated developed a chancre on the arm and secondary syphilis. It was found on inquiry that several of these women were affected with secondary syphilis, and the infection had been transmitted from one of these by the intermediate agency of the needle used for vaccination.

From these examples it is certain that in vaccination, even when the vaccinifer is healthy and the lancet irreproachable, syphilis may be transmitted from one subject to another by the organic elements transported by the lancet from a syphilitic to a healthy subject. It is also possible that contagion might be transmitted to the vaccinifer by means of the contaminated instrument, but I have not yet known of a case of this kind.

It is therefore indispensable (1) that the vaccinator should only use instruments which have been sterilized; (2) that in vaccination in batches the lancet or needle should never be carried from one subject to another without having been cleaned in alcohol or carbolic acid and passed through the flame; (3) the lancet or needle should never be transferred from the vaccinated to the vaccinifer without the same precautions.

Contamination by Vaccine.—There is only one safeguard against vaccinal syphilis, and that is the employment of calf-

[1] "Recherches cliniques sur l'Étiologie des Syphilides malignes précoces," Paris Thesis, 1875.

lymph, and this for the simple reason that the calf is not susceptible to syphilis. If we analyze the hundreds of cases of vaccinal syphilis which have been recorded, we find that in all cases the infection has arisen from human vaccine (excluding, of course, the cases of operative contamination which we have just considered). In other words, the only vaccinifer capable of transmitting syphilis by vaccine is man. It is, therefore, both a professional and social duty to uphold the substitution of animal for human vaccine.

Two objections have been raised against animal vaccine: (1) That there are more failures in vaccination with animal than with human vaccine; (2) that it confers less certain immunity against small-pox.

1. Even if it were true that there are more failures in inoculation with animal vaccine, this would not constitute a contra-indication of any importance. Failure of vaccination simply means that it requires repetition, and it is far better to repeat vaccination several times than to expose a patient to the risk of inoculation with syphilis. Moreover, if animal vaccination at first counted many failures, it is not so nowadays with improvement in technique, and recent statistics show that failures with animal vaccine are comparatively uncommon. Therefore the first objection to the use of animal vaccine may be disregarded.

2. The second objection would be more important if it were based on clinical observation. If it were established that animal vaccine conferred less immunity than human vaccine against small-pox, the question would be decided. It would be better to leave humanity exposed to the relatively rare danger of vaccinal syphilis than to lose part of the protection which vaccine offers us against small-pox. For, however grave syphilis may be, it is less grave than small-pox, and if we were compelled to decide between these two plagues, we should choose syphilis.

Whether the immunity conferred by animal vaccine is less certain and less prolonged than in the case of human vaccine can only be determined by numerous observations and very long experience; however, it has already been submitted to

severe tests. Thus, Warlomont reported that out of more than ten thousand infants vaccinated with calf-lymph at Brussels between 1865 and 1870 who were exposed to the great epidemic of 1870–1871, only one to his knowledge was attacked by small-pox. The same immunity was observed in cases of vaccination which were exposed to the same epidemic. The same protective effect of calf-lymph was observed in the epidemic of 1880–1881 in Germany and Belgium.[1]

Other observations showing the efficacy of animal vaccine have been reported, so that we may conclude that the second of the two objections does not constitute a contra-indication to the only prophylactic measure which can protect against vaccinal syphilis—namely, the substitution of animal for human vaccine in the practice of vaccination and revaccination.

The partisans of human vaccine state that vaccinal syphilis is rare, and that the number of cases of infection is comparatively insignificant compared with the number of vaccinations. This is no doubt true, but the danger exists nevertheless. There are hundreds of cases of vaccinal syphilis on record, and in some instances syphilis has been spread through a whole village in this way. In the second place, it has been stated that the danger can be avoided by always choosing a vaccinifer free from syphilis. This is perfect in theory, but in practice this immaculate vaccinifer would have to be found every eight days indefinitely! It was proposed to obtain these non-syphilitic vaccinifers by choosing older children, with the idea that hereditary syphilis generally manifests itself during the first few weeks or months. But many cases have been recorded where vaccinal syphilis was transmitted by older children. The epidemic of vaccinal syphilis at Rivalta, infecting thirty-eight infants, originated from a child aged eleven months. Moreover, *vaccino-syphilitic infection may be transmitted by a vaccinifer in a state of latent syphilis.*

For example, in one of my personal observations I find it expressly noted that the vaccinifer, an infant of healthy appearance, was examined from head to foot, with special attention to the mouth, genital regions and anus, without any specific

[1] Longet, "Dict. Encyclopédique des Sciences médicales."

lesions being discovered. Nevertheless it was syphilitic, and six months later presented syphilides around the anus. This infant infected at least six persons by its vaccine. The same with other cases which I could mention. Therefore an infant with absolutely no external sign of syphilis, but in a condition of latent syphilis, may transmit the disease by its vaccine.

Lastly, *the vaccine of a subject in the incubation stage of syphilis may transmit syphilis.* Thus, suppose a healthy infant has been vaccinated with vaccine taken from a syphilitic source, and that this infant in eight days' time serves its turn as a vaccinifer. The vaccine of this infant may transmit syphilis. This is proved by the following facts: At the epidemic at Lupara twenty-three infants were infected from the same vaccine, and one of these, which in its turn served as vaccinifer, communicated syphilis to eleven other infants. The same at the epidemic at Rivalta: one of the thirty-eight infected infants furnished a vaccine of ten days' date to seventeen other infants, of which seven contracted vaccinal syphilis. Therefore the vaccine of a subject in the incubation stage of syphilis may transmit the disease.

For these reasons no absolute security can exist with human vaccine, and *absolute security is only obtained with animal vaccine.*

CHAPTER XXXV

SYPHILIS BY EXTRAGENITAL CONTAMINATION

Extragenital syphilitic contamination, resulting from contagion apart from the genital organs, is of considerable interest from the prophylactic point of view.

In the first place, it constitutes an absolute refutation of the old prejudice among the lay public that syphilis is of exclusively venereal origin, and that it can be avoided by not exposing oneself to it. Extragenital chancres, both by their frequency and by their situation, show the fallacy of this foolish and dangerous belief.

In the second place, extragenital contaminations are far from exceptions or curiosities, as was formerly believed. Statistics show that out of one hundred chancres, six or seven are extragenital, and this proportion is necessarily a minimum much lower than the actual state of affairs. To this minimum must be added the unknown quantity of ignored or unrecognized extragenital chancres. These have increased in number in proportion to the increase of experience, and certain chancres, such as chancre of the tonsil, which were formerly not diagnosed, are now recognized as such. In fact, I think the proportion of nine or ten per cent. would not be too high for extragenital chancres—a figure which is far from being a negligible quantity.

Syphilitic chancres have been met with in all regions of the body—literally, from head to feet—but they are more common in some regions than in others. The following table shows the relative frequency of the different localizations of extragenital chancres, based on six hundred and forty-two cases.

Chancres of the cephalic region	484	cases
" " cervical "	4	"
" " trunk	21	"
" " breast	19	"
" " upper limb	56	"
" " lower "	4	"
" " anus and perianal region	54	"
	642	

It thus appears that *cephalic chancres* are much more frequent than all the other extragenital chancres put together. In their turn, these cephalic chancres may be divided according to the different regions of the head:

1. The mouth,	435	cases	Lips	328 cases.
			Tongue	53 "
			Tonsil	40 "
			Gums	9 "
			Palate	4 "
			Cheeks	1 "
2. The face,	47	"	Chin	24 "
			Cheeks	9 "
			Eye	7 "
			Nose	5 "
			Forehead	2 "
3. The scalp,	2	"		2 "
	484	"		484 "

In this case, etiology and prophylaxis are blended, for the knowledge of the causes which carry contagion to the different extragenital regions includes in itself the corresponding prophylactic indication. We will therefore consider the etiology of each of the groups of extragenital chancres.

Buccal Chancres

These are more common in men than in women (in the proportion of three hundred and fifty-three against eighty-two). They are also more common in youth, but may occur at any age—in sucklings and in old people.

Syphilis may contaminate the mouth in a hundred different ways, but these may be divided naturally into three chief groups, according to the mode of transit of contagion—*genito-buccal, bucco-buccal,* and *mediate.* The two first concern immediate contact between the contaminating and the contaminated subjects; the third consists in infection transmitted by an intermediate object charged with the specific contagium.

1. *Genito-buccal* contamination is that which is conveyed from the genital organs to the mouth. I am of opinion that this mode of contamination is less common than is generally supposed, and that a great number of buccal chancres are derived from one of the other two modes of contagion. However, a question of this kind interests the moralist more than the physician. In any case, this mode of contamination is far more common in men than in women.

2. *Bucco-buccal* contamination, in my opinion, is infinitely more common, and there are two reasons for the frequency of this mode of contagion. In the first place, the mouth, by reason of the great frequency with which specific lesions occur in it, is a veritable laboratory for syphilis. In the second place, the common practice of kissing favors the transmission of contagion.

For these two reasons, cases of syphilitic contagion from mouth to mouth are counted by hundreds, and I have often seen young married women infected in this way by their husbands, who have married prematurely, and were affected with buccal mucous patches. One of my patients, who had been syphilitic for six months, was constantly suffering from mucous patches, and married in spite of my remonstrances. A fortnight later he came to me with mucous patches on the lips and tongue, and four weeks after this his wife developed a labial chancre, which was followed by a long series of constitutional symptoms.

Duncan Bulkley relates the history of a patient who, by means of buccal mucous patches, infected two women almost at the same time. The first, to whom he was engaged, contracted a chancre on the lower lip; the second, who became his wife, developed a chancre of the tonsil.

With regard to contagion by kissing, there are two points which require consideration. The first is that *contagion from any part of the mouth may be transmitted to any part of the mouth.* It is obvious that contagion may be produced between organs which are capable of reciprocal contact, such as the lips and tongue; but it is not understood by the public that contagion may be derived from organs, such as the tonsils, which are deeply situated; or, inversely, that contagion can reach these organs. It has been established by clinical observation that contagious matter from the outside of the mouth can be conveyed to the depth of the buccal cavity, and that contagious matter from the depth of the buccal cavity may inoculate the lips. In this way labial mucous patches may give rise to a chancre of the tonsil, and mucous patches of the tonsil may transmit contagion to the lips or tongue. In each case the saliva acts as the vehicle of transmission of the virus.

The second point is that *bucco-buccal contagion may result from any contact between mouth and mouth.* The public have an idea that syphilis can only be transmitted by prolonged and reciprocal kissing, whereas any labial contact is sufficient. Contagion may follow the respectable kiss as well as the kiss of passion. From this follows the elementary rule of prophylaxis—*that a subject affected with specific buccal lesions should abstain absolutely from kissing of any kind.* This rule, however, is ignored by a number of people, either from ignorance or carelessness, and I know by experience how necessary it is to persuade patients to avoid the risk of transmitting syphilis to their friends and relations by imprudent embraces. In fact, I have notes of nine cases in which syphilis was transmitted by family kisses. It is, therefore, the duty of the medical man to warn patients against such catastrophes.

3. *Mediate Contagion.*—Buccal chancres contracted by mediate contagion are more common than is generally supposed. If we believed all that patients say, this would be the most usual origin of these chancres. For instance, drinking out of a dirty glass is often invoked as the cause of such accidents. The truth is that many persons attempt to impose on the medical man, or even impose on themselves, as to the

mode of their contamination. The following is a case in point:

One of my patients, affected with a labial chancre, attributed its origin to drinking with others out of the same glass; but as I happened to be treating his mistress for secondary syphilis, with mucous patches of the lips and tonsils, this explained the real origin of his chancre.

However, it is necessary to recognize that mediate contagion takes a large share in the etiology of buccal chancres. There is no comparison between the part which they play here and that which they take in genital chancres, in the etiology of which they are comparatively unimportant. Every object charged with syphilitic contagion which comes in contact with the mouth may contaminate it. Naturally, objects which are in most common use are the cause of most contaminations of this kind.

(1) In the first place come *feeding utensils*—spoons, glasses, and bottles, and less often knives and forks. Rollet mentions the case of a young woman, "of irreproachable morality," who contracted a chancre of the lower lip owing to her custom of tasting all the dishes prepared by her cook with the same spoon which was used by the latter, who was suffering from mucous patches of the throat. In an observation of Lees, a young woman contracted a chancre of the tongue by using a spoon which had been used by a servant affected with syphilitic lesions of the mouth. Roussel mentions the case of a child who contracted a chancre of the tonsil after using the same spoon as its mother, who had mucous patches in the throat. Pellizzari mentions a case in which two workmen used the same glass. One of them had labial mucous patches, and the other contracted a chancre of the lip. I have in my notes the history of a young child who was infected on the lip by a feeding-bottle. On inquiry, it was found that a woman who was working in the house amused herself by sucking the child's bottle at a time when her lips were covered with mucous patches. Sometimes contagion from child to adult is conveyed by the feeding-bottle. Thus, Hillairet mentions the case of a grandmother who was contaminated in this way by her grandson, who was affected with hereditary syphilis. Lastly, it is probable that contagion

by utensils was the cause of a small epidemic of syphilis which occurred at Chavanne-Lure in 1828. This epidemic claimed twenty to twenty-five victims, and was remarkable in "being propagated among those who dined together."

(2) In the second place, mediate contagion is often carried to the mouth by *smoking utensils.* Numerous cases of buccal chancres have been reported which were transmitted by pipes, cigars, and cigarettes, and even by cigar-cutters. Denis Dumont reported the case of an officer who contracted a chancre of the mouth by smoking the pipe of one of his friends who was affected with buccal mucous patches.

I observed the following curious case in private practice: One of my patients, a married man nearly sixty years of age, had an ulcerative lesion of the palate, which I diagnosed as a chancre, and which was followed by secondary syphilis. A long inquiry revealed that the valet had been smoking his master's pipe, and was affected with mucous patches on the lips, tongue, and tonsils. As an epilogue, the same valet brought me his fiancée with a fine chancre on the lower lip!

Cigars and cigarettes are also dangerous, for several reasons. In the first place, by exchange from mouth to mouth. For example, a young student entered a bar in the Latin quarter, and met a charming young lady, who offered to complete his education. As a beginning, she tried to induce him to smoke. He refused at first, but the girl insisted, and after smoking a cigarette for a few moments, passed it on to the youth, saying, "Now that my lips have touched it, you will not dare to refuse it." He did not dare, and four weeks later he developed a chancre on the lip!

No less dangerous are the stumps of cigars and cigarettes which, after being thrown away, are smoked by children and others. A case was published by Rabl concerning a young girl who contracted a chancre of the lip by smoking a cigar which she took from the mouth of one of her cousins who was affected with syphilis.

Moreover, certain cigars may be infected during their manufacture. In Havana the cigars are rolled on the naked thigh, so that if the workman has a specific lesion on the thigh the

cigar may be impregnated with pathogenic secretions. Also in fashioning the end of the cigar it is often moistened by the mouth, and may be infected in this way. This is shown by an American observation concerning a cigar-worker who had to give up his occupation because his mouth was covered with mucous patches which were irritated by the tobacco leaves. It is unnecessary to dwell upon the character of the cigars which had been turned out by this workman!

(3) In the third place, contagion may be carried to the mouth by all objects of common use which are liable to be soiled by syphilitic secretions—pens, penholders, pencils, rulers, speaking-tubes, etc. One of my students at the Lourcine Hospital was a victim to one of these forms of contagion, which are, I think, more common than is generally supposed. He had the bad habit of putting his pen in his mouth while taking notes and examining patients. He soon developed a chancre on the lower lip, which, as he affirmed that he had not exposed himself to contagion in the ordinary way for several months, I attributed to infection by the pen and his fingers. In this case the contamination may be called *bi-mediate.*

Sometimes contagion has been carried by tooth-brushes, pipettes, paper-knives, etc. I remember the case of a well-known physician who had the habit of sucking his paper-knife while reading. One day he was asked to examine a nurse-maid who was suffering from a sore throat, and used the paper-knife as a tongue-depressor. The maid was found to have mucous patches in the throat, but, being suddenly interrupted, he forgot to clean the paper-knife. The result was that he developed a chancre of the tonsil, which was the origin of fatal cerebral syphilis, as is so often the case in subjects who do much brain work.

Contagion of the same kind has also resulted from tongue-depressors, laryngoscopic mirrors, dentists' instruments, children's toys, whistles, trumpets, etc. Examples of this kind are too numerous to mention, and I will only relate the two following as examples:

Roddick reported the case of a gingival chancre resulting from a difficult tooth extraction which lacerated the gum. A

very minute inquiry as to the origin of this chancre showed in all probability that contagion was transmitted by a forceps which had been used for a syphilitic subject affected with mucous patches. Several similar cases of chancres of the lips, gums, and tongue resulting from dental operations have been published by Duncan Bulkley, Leloir, Lancereaux, Otis, Giovannini, Dulles, etc.[1]

A still more curious example is related by Hanot. A present of a trumpet was made to a child, and its mother and a young uncle showed him how to use the instrument, the trumpet thus passing from mouth to mouth. Unfortunately, the young uncle had mucous patches in his mouth. The result was that both mother and child were infected, and the child a few years later succumbed to general paralysis. The mother also suffered severely from hepatic syphilis, and died of cachexia.

Lastly, infection may be conveyed by postage-stamps, by sweets and bonbons, by speaking-tubes, and by money. Du Castel observed a case of buccal contagion in an omnibus conconductor, who developed a chancre of the lip from holding money in his mouth.

4. *Occupational Contamination.*—The best known example of this form of contagion is that which occurs among *glass-blowers.* The frequency of syphilis among glass-blowers was remarked long ago, but was not understood till Rollet, in 1858, showed that it was conveyed during the operation of blowing bottles by the tube being passed from mouth to mouth. If one of the workmen is affected with mucous patches in the mouth, it is obvious that the others are likely to contract a chancre. This explains the frequency of syphilis among glass-blowers, and several local epidemics have been caused in this way.[2]

Occupational infection has also been observed among musicians by exchanging instruments. I have myself attended a military bandmaster, a married man of irreproachable character, who contracted a labial chancre from using the horn of

[1] A great number of cases of accidental inoculation are reported by Duncan Bulkley in his excellent book on "Syphilis of the Innocent."

[2] *Vide* Guinand, "De la Syphilis des Verriers," 1881.

one of his musicians who was affected with secondary syphilis of the mouth.

Practices peculiar to certain occupations are no less dangerous—for example, the habit of upholsterers of holding tacks in the mouth, and returning those not used into a bag. If these tacks have been in contact with infected saliva they may contaminate a healthy mouth, and a case in which infection was conveyed in this way has been reported by Spillmann. The practice among electricians of testing a current with their tongue is also dangerous. Behrend has seen a family epidemic of syphilis caused by mouth insufflators used for insect powder. The same with other industrial or domestic customs, in which the principle is always the same—namely, the passage from mouth to mouth of utensils or instruments which may have been contaminated.

5. Although the great majority of buccal chancres are contracted in one of the above ways, there still remain a few cases which are derived from other causes. *Insufflation from mouth to mouth* may cause victims in both ways, and I have known a midwife infected in this way by a newly born syphilitic infant. More common than this is *contagion carried to the mouth by the fingers,* especially from the genital organs of women. Sigmund published the case of a midwife who contracted a digital chancre and caused a labial chancre in her child by introducing her finger into its mouth. I have myself observed a peculiar case of chancre of the tongue in a child of eighteen months, who was infected by putting its fingers into the mouth of a nurse affected with buccal syphilides.

6. Lastly, there remains the buccal infection contracted by *suckling.* Sometimes a syphilitic wet-nurse infects the child by lesions which develop on the breast during suckling. More often it is the nurse who is infected by a syphilitic child, and develops a chancre of the breast, by which she may infect another infant.

Such are the numerous and divers ways in which syphilitic contagion may be conveyed to the mouth, upon which I should not have dwelt so long but for the prophylactic interest which is connected with them. But in spite of this multiplicity of

different causes, and in spite of the most careful investigation, there are some cases the origin of which absolutely escapes detection. I have many times observed chancres of the mouth or face of which the etiology has remained inexplicable, and this after the most careful inquiry among intelligent and honest persons, sometimes even in veritable abodes of virtue. Such cases appear incomprehensible, but are none the less authentic, and no doubt escape analysis because they are chance occurrences.

The following case will illustrate this point: I was lately consulted by a stranger at a hotel in Paris for a sore on the penis. This turned out to be a large chancre of three or four months' duration which had become phagedenic. The patient, after removing the dressing from the sore, which was streaming with pus, placed it on a table, which was naturally soiled with the pus. Supposing that this table was not subsequently cleaned, it is easy to imagine that the next comer might place his cigar or cigarette or handkerchief, or some toilet article, on the table in question, and might become infected by the articles being contaminated by the pus remaining on the table. In this way a contamination might occur which would be incomprehensible both to the patient and the doctor he consulted.

This, I believe, is the explanation of a number of cases which escape all etiological analysis, cases which are only inexplicable because they occur by chance, and are due to purely fortuitous circumstances.

Nasal Chancres

Chancres of the nostrils and nasal fossæ are rare, and often of obscure origin. In the majority of cases the mode of contagion is not revealed even by careful inquiry. For example, three of my patients, who were intelligent and observant persons, assured me that they had no idea how they came to be inoculated in the nose. We must, therefore, believe that nasal chancres usually belong to the order of chancre infections which I have just mentioned. In certain cases, however, infection has been traced to direct contact, transmission by fingers, or mediate contamination.

1. Direct contagion generally results from a kiss, but sometimes from genito-facial contact. In a case reported by Spencer Watson it was derived from suction exercised by a syphilitic suckling on the end of the nose of a wet-nurse. In another case it was caused by a bite. A medical man assured me that he contracted a nasal chancre by saliva from a patient in whom he was cauterizing some mucous patches.

2. Sometimes contagion is carried to the nasal fossæ by the fingers charged with specific matter. The following case is an example:

A married man visited a prostitute, and being afraid of contracting disease, abstained from coitus, but did not refrain from digital contact with the vulva. Six weeks later he came to me with a chancre on the nasal septum, which he attributed to the fact that he neglected to wash his hands after leaving the woman, and scratched a sore place on his nose.

Jullien relates another case: A carman had received several wounds on the nose. Before these were healed he spent the night with a woman with whom he had intimate contact in various ways. Three weeks afterwards he was affected with three chancres, one on the penis and two on the nose, and the two latter were situated exactly on the points which had been injured.

There are two considerations which show the possibility of contagion being conveyed to the nose by the fingers: The chancre is nearly always within reach of the finger; secondly, there is often a previous abrasion, pustule, fissure, or acne spot, etc., which is liable to be scratched by the finger.

3. Lastly, there is mediate contagion by means of handkerchiefs, serviettes, and surgical instruments, such as catheters, speculums, etc. In the celebrated epidemic of syphilis by *catheterism of the Eustachian tube* which occurred at Paris some time ago, as in all cases of the same kind, infection was necessarily carried by the catheter either into the nasal fossæ or the naso-pharynx. But the resulting chancres were not observed, and only the symptomatic buboes and the secondary symptoms were seen.

Chancres of the Eye

Chancre of the eye, like nearly all chancres, is much more common in men than in women. It has been observed at all ages, even in sucklings. It is comparatively common in medical men from professional contamination. In many cases the etiology is obscure, and ocular contamination must frequently be due to purely accidental causes. However varied the causes may be, they can be divided into the usual classes of direct, indirect, and mediate.

1. *Direct infection* is usually caused by kissing, and many observations of this kind have been recorded. A young student infected his fiancée with a chancre of the eyelid by kissing when he had mucous patches in the mouth. A child of eight months contracted a chancre in the angle of the eye after being kissed by its aunt, who was affected with secondary syphilis of the mouth. Young infants are specially exposed to this mode of contamination on account of the fondling to which they are subject.

Contagion may be transmitted from the mouth by *spitting* or *coughing* from the mouth containing mucous patches. Medical men are specially liable to be infected in this way when examining or cauterizing syphilitic throats, and I have myself treated five of my colleagues who have contracted syphilis in this manner. It is interesting to note that three of the five colleagues in question washed their faces immediately after the occurrence. This does not show the futility of washing, but rather the necessity, in such cases, of complete ablutions with antiseptics. In my opinion the best safeguard is immediate washing with solution of perchloride of mercury (one in one thousand).

More rarely contagion is transmitted by *biting* or *suction*. Campart relates the case of a young man who, in a fight, was bitten on the eye by his opponent, who had specific lesions in the mouth. A chancre of the lower eyelid resulted. Fortuniades mentions the case of a boxer who had effusion of blood in the lower eyelid. His mistress punctured the swelling, and

evacuated the blood by suction. Unfortunately she had mucous patches in the mouth, and a chancre developed at the point of suction.

The tongue may also convey contagion to the eye. In certain countries the tongue is used to extract foreign bodies from the eye, and even for the treatment of trachoma. Contamination of the eye is likely to occur if the tongue of the operator is charged with specific products. A Russian physician, Tepliaschin, has given an account of an epidemic of syphilis which was introduced into a village by a "magician," who professed to remove foreign bodies from the eye, and to cure trachoma with his tongue. This magician, who was syphilitic, naturally infected his patients, so that sixty-eight persons in all were contaminated, eight of the first victims with chancres of the eyelid.

Contagion may also arise from the dirty custom which is practiced among the lower classes of washing the eye of infants with saliva, or even with urine. Leloir has reported a case in which an infant contracted a palpebral chancre in this way.

Lastly, several observations have been recorded in which chancres of the eyelid were derived from contact with the genital organs.

2. *Indirect infection* generally occurs by means of the fingers. Ricord related the case of a man who caused a chancre of his eyelid by rubbing it with his finger after contact with the genital organs of a woman.

The pre-existence of certain lesions of the eye, such as conjunctivitis, blepharitis, eczema, sty, etc., constitutes a natural predisposition to contagion of this kind. Pruritus, which is a common symptom of these conditions, leads to scratching, and scratching with fingers soiled with contagious secretions is more likely to transmit contagion when exercised on surfaces denuded of epithelium.

3. *Mediate contagion* may be conveyed by sponges, towels, handkerchiefs, contaminated water, surgical instruments, etc. Baum mentions a case of palpebral chancre which was caused by the use of a towel which had been used by a man affected with a chancre. The moistened cigarette which is used to

extract foreign bodies from the eye may also convey infection. A man employed in the laundry of a hospital for syphilitics, and who was suffering from chronic conjunctivitis, contracted an ocular chancre by handling linen soiled by syphilitic secretions.

Chancres of the Face

1. In many cases chancres of the face are due to direct contagion from the genital organs or the mouth.

Genito-facial contagion is fairly common from woman to man, and is the cause of chancres of the nose and chin. Poncet mentions a case in which a man admitted having contracted a chancre of the nose in this way. In some cases facial chancres in women may be derived from contact with the penis.

But in most cases contagion is conveyed by the mouth, chiefly by kissing. Ricord, in his "Lettres sur la Syphilis," relates the case of a colleague who contracted a chancre on the cheek after being embraced by one of his "syphilitic and grateful patients"! I have more than twenty observations in which kissing was the cause of chancres of the cheek, nose, chin, and forehead. In most cases the contaminating kiss was that of passion, but indifferent kisses are amply sufficient for contagion.

I have seen a son infect his mother, and a brother his sister, in this way. I have even seen a newly married woman contract syphilis owing to the numerous embraces to which she was subjected after the ceremony! Four weeks after the nuptial day she developed a chancre on the cheek. The husband, on whom suspicion naturally fell, was examined by me, and found free from disease. It was proved, as far as such a thing can be proved, that the young woman could only have been infected on the day of her marriage, when she was embraced by more than a hundred persons, known or unknown.

Young children have often been the victims of this kind of infection. A case of the kind occurred in my practice some years ago. A wet-nurse, recently infected by a syphilitic suckling, came to hospital with her own infant, which was still free from infection. Suckling was suspended, and she was warned

not to kiss the child. All went well for some months, when she returned with the child, which presented a chancre on the chin. Unfortunately, the woman had embraced the child when she was affected with labial syphilides, which she regarded as simple fissures.

Buccal-facial infection has often been observed from one child to another. In other cases contagion has been caused by biting, spitting, or suction. A medical man contracted a chancre on the cheek by a patient spitting in his face while he was cauterizing mucous patches in the throat. Anderson relates the case of a man who developed a chancre of the cheek after suction of a wound he had received in that situation by a friend who was affected with buccal syphilides.

2. *Indirect contagion* is sometimes conveyed to the face by the fingers. A medical man told me that he was infected in this way by the habit of scratching a wart on his cheek. De Chapelle relates the case of a workman who wounded his cheek and had connection with a prostitute the same evening. A few weeks afterwards a chancre developed in the situation of the wound, which he had inoculated by his fingers soiled with vulvar secretions.

3. *Mediate contagion* may occur by means of contaminated towels, handkerchiefs, sponges, etc. Pellizzari mentions a case in which father and son used the same towel. The father used this not only for his face, but also for his penis, on which was a chancre. The son, after using this towel, developed two chancres on the cheek. The same author records the case of a married man who, although affected with a chancre on the chin, continued to sleep with his wife. One night the dressing came off, and fell on his wife's cheek and neck, in both of which places a chancre afterwards developed.[1] Still more curious is a case related by Monnet. A family consisting of father, mother, and three children lived together in a dirty hovel. The mother, a woman of loose morals, contracted syphilis. She naturally transmitted this to the husband, and also to the three children, through the medium of a dirty rag which was used

[1] "Della transmissione accidentale de la sifilide" (*Giornale ital. delle mal. ven.*, 1882).

to wash the whole family, and which, when there was no water, was moistened with saliva to clean the children's faces! These children were all affected with impetigo, which served as a port of entry for the contagion. The youngest child developed a large indurated chancre on the cheek, followed by severe syphilis, to which it succumbed; the two others were affected with labial chancres.[1]

4. A special mode of facial contamination is through the medium of *the razor*. Numerous cases have been recorded of chancres of the face which were attributed to infection by means of the barber's razor. But in the operation of shaving the razor is not the only medium which may transmit contagion; there are also the shaving-brush, the towels, and the barber's hands to be considered. In any case, the operation of shaving at the barber's shop is more dangerous than is generally supposed, and whatever certain skeptics may say, contagions transmitted in this way are irrefutable—first, because of their frequency; secondly, owing to the peculiar circumstances attached to some of these cases.

Examples.—A man, aged sixty-nine, who had not been exposed to the risk of contagion for ten years, was shaved by a barber, who cut his chin and applied his finger to the wound for several minutes to stop the bleeding. Four weeks later a chancre developed at the seat of the wound.

A man, who usually shaved himself, went to a barber, and noticed that the customer who immediately preceded him had some remarkable spots on the face. A few weeks later he developed a chancre on the cheek.

Two friends went to be shaved in a watering-place much frequented by syphilitics. Both contracted chancres after the operation, at the normal period.

Moreover, men who are accustomed to get shaved at a barber's do not usually give up the custom when they become syphilitic, even when they have secondary papules on the face. Indeed, I could mention more than thirty patients who continued to visit the barber while they had chancres of the face!

[1] "Trois Cas de Contamination indirecte de Syphilis" (*Journal des Mal. Cut. et Syph.*, 1891).

It cannot be said that this risk of contagion is usually prevented by purification of the barber's implements. Is everything which is used for shaving washed and purified after each operation in the city shaving saloon any more than in the village-barber's shop? Are the minute precautions taken which are necessary for the elimination of germs? Is the razor ever passed through the flame, or put in alcohol or any other antiseptic? It is needless to reply to such indiscreet questions.

We may, therefore, conclude—

(1) That shaving performed with a razor which is used for all comers is liable to cause syphilitic contamination of the face.

(2) That, in the absence of sufficient precautions to prevent it, it is not surprising that contagion of this kind often occurs, and will continue to occur, so long as the indifference of the public leaves the hairdressers the initiative of taking hygienic and antiseptic precautions, which they are hardly competent to understand or to regulate.

5. In some cases the origin of facial chancres remains obscure, in spite of the most careful inquiry. The following is an example which occurred in my practice some years ago:

A young student, aged sixteen, was affected with a chancre in front of the ear. He denied having had any sexual connection, or having been embraced by any one outside his family. I examined every person in the house, including the father and all the servants, but found them all healthy. There could have been no infection by the razor, as he had not begun to shave, nor by articles of toilet, which were exclusively personal. In short, in spite of all efforts, no cause of infection was discovered.

This is not an isolated case, and a certain number of these contaminations must be due to fortuitous circumstances which escape all the usual methods of inquiry, as I have already pointed out.

6. Lastly, I may mention that chancres of the face are more common in men than in women, and are especially seen in youth. In young infants chancres of the face are the most common of all extragenital chancres, and this is due to the frequency with which they are kissed and fondled by adults,

in whom buccal syphilides are only too common. Rollet mentions a case in which a child of fifteen months, infected on the face by being embraced by a prostitute, spread the contagion to its grandmother, two brothers, and two sisters.

Chancres of the Ear

The etiology of chancres of the ear is the same as those of the face. They may be caused by kissing or biting. Perrin and Lavergne reported the case of a man who was severely bitten on the ear during a fight. The wound healed, but afterwards a large phagedenic chancre developed in the same place. Righter mentions a case which developed at the seat of a burn on the ear after the application of a piece of sticking-plaster which had been moistened by the saliva of a subject affected with buccal syphilides. The operation of piercing the ear for earrings, which is usually performed by jewelers, has been known to be the origin of a chancre.

So far as I know, no authentic case of contamination by the use of the public *telephone* has yet been recorded, but some day or other we must expect to meet with contagion of this kind.

Chancres of the Scalp

These are extremely rare, and there are only a few cases known. In one of the cases I have observed, contagion was due to kissing. The patient was a married woman, whose husband was affected with buccal syphilides, and as a precaution he only kissed his wife on the hair. In this case the chancre was situated on the parting of the hair. In a case mentioned by Ricord the contagion was probably transmitted indirectly by contaminated fingers. Pellizzari has recorded a case in which a child was infected on the scalp by a comb which had been used for another child who was affected with pustular syphilides of the scalp. In a case of Mauriac's a chancre of the scalp resulted from the prick of a hairpin.

Chancres of the Trunk and Limbs

The origin of these chancres is often difficult to explain, as is shown by the following example:

Some years ago I treated a young man for a chancre on the back of the thigh, but the origin of the contagion was never discovered. The patient himself suggested the possibility of contagion at the public baths, by sitting on the edge of the bath. In this position the posterior surface of the thigh might be inoculated by specific matter deposited by another person, but this was simply a hypothesis.

In other cases, however, the modes of infection can be discovered, and, apart from vaccination, suckling, and professional contamination, they may be divided into the usual classes of direct, indirect, and mediate contaminations.

1. **Direct Contagion.**—This is nearly always from the genital organs or the mouth.

When it proceeds from the genital organs it is generally from man to woman. The penis, during abnormal peregrinations, may carry contagion to various places, and may contaminate the peri-genital regions, the abdomen, thighs, loins, hand, breast, and even umbilicus and the popliteal space.

I once treated a very obese woman for a chancre of the umbilicus, and she confessed that this was the result of direct contagion from her lover, who at the time was being treated for a chancre of the penis.

More rarely contagion is carried directly to man by the female genital organs. For example, one of my patients contracted a chancre of the thigh by sleeping with a woman with his thigh in contact with the vulva, on which I subsequently discovered the remains of a chancre. Another of my patients contracted syphilis through dancing on his knee a girl who was affected with mucous patches of the vulva. As both the actors in this lively scene were in a primitive costume, inoculation took place easily from the vulva to the front of the thigh.

In other cases contagion occurs under different conditions which are no less curious, and these require explanation from the point of view of prophylaxis. A young woman took charge of a syphilitic infant with secondary lesions on the buttocks. Owing to the habit of carrying the child on her bare arms, she contracted a chancre of the forearm at the point where the child's buttocks rested.

Dowse reported a similar case where a girl nine years of age contracted a chancre of the forearm through nursing an infant with mucous patches about the anus. In this case the chancre was followed by fatal malignant syphilis.[1]

Two workmen slept in the same bed, and one of them was affected with a chancre of the meatus. The bed being narrow, one of the men had to sleep on his side, and in this position was inoculated in the region of the great trochanter by contact with the penis of his comrade.

More curious still is the case of an acrobat, who was contaminated on the nape of the neck by carrying on his shoulders a young girl of his troupe who was affected with mucous patches of the vulva.

However, chancres in these regions are more often due to contamination by the mouth, by means of which infection has been conveyed to every part of the body—literally, from head to foot. Leloir mentions the case of a young student who was infected between the toes, on a point which was excoriated with eczema, by the kisses of a young woman.[2]

In medical literature there are numerous examples of chancres caused by kissing on the neck, chest, breast, axilla, back, abdomen, umbilicus, buttocks, groins, thigh, leg, and ham. A young girl, who had contracted a chancre of the thigh by kissing, told me that for several years she had been exploited by her mother, who "offered her as a virgin to rich clients, but with the guarantee of respecting her virginity"!

Chancres of the trunk and limbs may also be caused by biting and by suction. As a specimen of a chancre caused by suction, the following is a good example: At a supper-party of the *monde ou l'on s'amuse,* a bottle of champagne exploded between the legs of one of the ladies, and caused a small wound in her calf. As the lady pretended that a piece of glass remained in her leg, one of the guests offered to remove it by sucking the wound. Unfortunately, his lips were covered with mucous patches, and four weeks later a chancre developed on the calf of the lady.

[1] *Lancet*, 1877.
[2] "Leçons sur la Syphilis."

2. **Indirect Contagion.**—In this group of cases contagion is the most often conveyed by the *fingers*. For instance, a workman had a slight wound on the forearm, which he did not cover with any dressing. A few weeks after spending the night with a woman he developed a chancre on the penis and another on the forearm in the situation of the wound. The second chancre was probably inoculated by the fingers contaminated with vulvar secretions.

In the same way one of my patients was inoculated on the elbow, probably by contagion carried by the fingers to an abrasion. Contaminations of this kind by means of the fingers would be common in special hospitals if we did not take care to systematically wash the hands after examining a syphilitic sore.

Sometimes the *saliva* is the vehicle of contagion, through the medium of sticking-plaster and other things moistened by the saliva. I have seen several cases of this kind, of which the following is an example: A child who was playing with its nurse in the Tuileries fell down and cut its knee. A lady who was passing by applied a piece of sticking-plaster, after moistening it with her saliva. Four weeks afterwards a chancre developed at the injured spot.

The operation of *tattooing* is another mode of infection, and a number of cases in which syphilis was transmitted in this way have been recorded by different observers.[1] In this case the *saliva* is almost invariably the medium of transmission, either by a syphilitic operator holding the needle in his mouth, or by mixing his colors with saliva. Occasionally, transmission has apparently occurred by using a needle after it had been used for a syphilitic subject. Robert relates the case of a soldier who developed no less than eight chancres on a design tattooed by a man who used his saliva for mixing the pigments. Moreover, as tattooing is generally performed on batches of men, there are often several victims, and as many as twenty-six infections have been recorded.

Contagion is sometimes conveyed by *skin-grafts*. This is shown by a case of Deubel's, in which skin-grafting was per-

[1] *Vide* Duncan Bulkley, "Syphilis of the Innocent," p. 231.

formed for a large ulcer consecutive to gangrenous erysipelas. A month after the application of the first grafts a chancre developed in the healing tissues, and was followed by constitutional syphilis. On inquiry, it was found that the person from whom the grafts were taken was at the time suffering from secondary syphilis.[1]

3. **Mediate Contagion.**—This takes a large share in the etiology of chancres of the trunk and limbs, but it is not always easy to trace such cases to their origin, and mediate contagion must often be assumed because of the absence of other sources of contamination. The following example is a case in point:

A patient entered hospital for eczema of the forearms and hands. Some weeks later, in the region of the former eczema on each elbow, two small erosions appeared, which developed into typical chancres, and were followed by secondary syphilis. In this case the chancres developed while the patient was in hospital, so that there was no question of venereal or of indirect infection. After exhausting a number of hypotheses as to the cause of the infection, we ended by assuming that the patient must either have been inoculated by accidentally contaminated dressings, or by leaning on a table with his bare elbows. In a hospital where syphilitics abound it is not impossible for such accidental contaminations to occur, in spite of all care.

Any object may serve as a medium for mediate contagion, but there are some which are more liable to convey infection than others.

(1) *Body Linen.*—Barbantini mentions the case of a little girl who was infected by her mother's chemise. Dzondi reports the case of a woman, aged eighty, who contracted a chancre of the groin after wearing the drawers of a syphilitic woman. Taylor relates the following case: Two women who slept in the same room changed their drawers by mistake. One of them contracted a chancre of the thigh, the other being affected with syphilitic ulceration of the thighs.

(2) *Old Clothes.*—Old pantaloons soiled by their first own-

[1] *Gazette Médicale de Paris*, 1881.

ers have more than once transmitted syphilis. I have seen a chancre on the shoulder in a young woman caused in all probability by wearing a garment given her by a friend who was covered with pustular syphilides.

(3) *Bedclothes.*—It is well known that in certain auto-inoculable affections, such as soft chancre, favus, scabies, impetigo, etc., the bedclothes are agents of propagation from one part of the body to another. It is, therefore, not surprising that syphilis may be conveyed in this way, and several cases of the kind have been observed. Gastou showed a case of chancre of the abdomen at the Dermatological Society, contracted by a man who was reduced to sleeping in low places in which the bedclothes were filthy. He had had no connection for ten years, and was covered with phthiriasis and scratch-marks which rendered inoculation easy.

Cases of this kind have sometimes led to medico-legal actions, as in a case of Gailleton's concerning a little girl who contracted syphilis by sleeping in the same bed as her syphilitic father. A criminal assault was first suspected, but the father was acquitted of the charge by the evidence of Gailleton.

(4) *Bath-linen and Bathing-dresses.*—Duncan Bulkley relates the case of a patient who probably contracted syphilis in a public baths through the medium of contaminated linen. He had not been exposed to any risk of contagion for a long time, and a few weeks after visiting the baths a chancre developed in the intergluteal furrow, which had been affected with eczema.

I have treated, with MM. Hardy and Besnier, a lady of eminent respectability, who was certainly infected at one of the large hydrotherapeutic establishments in Paris by a hair-glove used for rubbing. The chancre in this case was situated on the hip, at a spot where the skin was eroded by too vigorous rubbing.

(5) *Sorting, mending, and washing the linen of syphilitic subjects* are naturally dangerous operations by which syphilis has more than once been transmitted to hospital and laundry employees.

(6) *Contagion by Latrines.*—I have found much difference

of opinion with regard to contamination by means of privies. Some regard it only as a convenient excuse for persons wishing to dissimulate, but others agree that it is not only admissible in theory, but proved by clinical observation. Personally, I am convinced that the truth, in this case, is not on the side of the skeptics and scoffers.

No doubt contagion by water-closets has been exploited by unfaithful women, who are only too glad of such an excuse to cover infection contracted in other ways, and also (I speak from experience) by puritanical hypocrites with the object of leaving their "respectability" intact in the presence of their physician. What practitioner has not heard such a cause assigned even when it was the least probable? And how many times have we not been obliged to pretend to believe it for the sake of keeping the peace of the household?

But the lies of some do not exclude the sincerity of others, and I for one accept the possibility of syphilitic contamination by latrines. I would even go further, and say, with R. W. Taylor, that what surprises me is not that latrines are sometimes the medium of syphilitic contaminations, but that these do not occur oftener.

It is obvious that the seats of water-closets may be soiled by the secretions of a syphilitic person who sits on them, and that these may inoculate the skin of healthy subjects who sit on them afterwards. It is also apparent that water-closets, and especially public ones, must often be used by persons affected with syphilitic lesions of the genital or perianal regions, or of the thighs and buttocks. Moreover, these places are used by patients to change the dressings on syphilitic sores on the penis, etc., and they are not always careful where they place the contaminated lint. It is, therefore, absurd to maintain that privies are incapable of transmitting syphilitic contamination, and, for my part, I have observed several cases of this kind which, for various reasons, I was compelled to believe. In one case which I examined with Dr. Sevestre, a young lady contracted syphilis a few days after marriage, in all probability through the water-closet of a hotel. The husband was examined by us several times, and was always free from syphilis.

(7) *Instrumental and Medical Contagion.*—In principle, all instruments and utensils used for medical purposes may serve as the medium of syphilitic contagion, and many of them have already been shown to have caused contamination of this kind. I will mention a few examples: Köbner has reported a case in which a chancre followed the incision of an axillary abscess. Lang has seen a chancre result from the opening of a boil. A well-known physician confessed to me that he transmitted syphilis to one of his patients by a hypodermic syringe, which had been used for several syphilitic subjects. Chancres have also been known to follow the operation of *venesection,* especially at the time when this operation was performed by barbers. Duncan Bulkley has collected accounts of thirteen epidemics of syphilis which were caused by *cupping,* in one of which there were no less than two hundred victims. These are explained by the complicated nature of the instrument, and the many possibilities of infection derived from the glass, the knives, the sponges, and the blood of previous patients, etc., without reckoning the operator's fingers.

Lastly, I come to a mode of mediate contagion which is not generally known, and consequently one which I particularly wish to point out. I am convinced that syphilitic infection may result from *cauterization with the crayon of nitrate of silver.* If this has touched a syphilitic sore, I am of the opinion that it may convey syphilis. This conviction is based upon a certain number of cases which I have observed in private practice. I have several times seen simple sores of the penis become transformed into syphilitic chancres after cauterization with nitrate of silver, and in conditions where this transformation could not be explained by any other cause.

For example, a young man was affected with typical herpes of the prepuce, which was treated by simple applications. However, as the sores did not heal quickly enough to please him, he went to a quack to have them cauterized with nitrate of silver. Five weeks later he came to me again with a typical indurated chancre situated in the same place as the herpes. Now this patient had not had connection with a woman for six months before the herpes appeared or since then. Also

inquiry failed to reveal any other source of mediate contagion. The only source of infection remaining was the stick of nitrate of silver.

In the second place, I have in my notes several cases of anal and perianal chancres which developed under circumstances which could hardly be explained except by accidental contamination derived from cauterization by nitrate of silver. On the one hand, these chancres were produced in subjects in whom direct contagion was hardly admissible—for example, in an old widow lady. On the other hand, these chancres invariably developed under the same circumstances—namely, on former anal or perianal lesions, such as eczema, fissure, fistula, piles, etc., always after cauterization with nitrate of silver, and always with the incubation period of syphilis. Therefore, in these cases a combination of considerations appeared to incriminate the stick of nitrate of silver as the cause of the contagion. But I admit that all these cases were open to various objections, and were not conclusive, till the two following cases occurred which appeared to be convincing.

One of my colleagues, a bachelor, had had no sexual connection for more than six months, when he was affected with two minute erosions of balanoposthitis. He cauterized these with nitrate of silver, and they soon healed. A few weeks later, in the absence of any venereal contact, two syphilitic chancres developed in the same situation, and were followed by secondary symptoms. The crayon of nitrate of silver had previously been used to cauterize several syphilitic lesions.

The second case relates to a young man who burnt his middle finger on August 8th. Soon after this he was called upon to perform his twenty-eight days' military service. As the wound did not heal, it was cauterized on August 27th with a stick of nitrate of silver, which had been used for the mouths of several syphilitic soldiers. In October the patient had a syphilitic chancre on the finger at the place which was cauterized.[1] In this case there was no possible doubt that infection was due to nitrate of silver. A case of the same kind has been observed by R. W. Taylor.[2]

[1] Leloir, "Leçons sur la Syphilis." [2] Duncan Bulkley, *loc. cit.*, p. 193.

On the whole, therefore, it appears irrefutable that syphilitic infection may be derived from a crayon infected with syphilis. The *holder* is probably the actual medium of contagion, as it is difficult to conceive that the syphilitic virus could live in contact with such a substance as nitrate of silver.

Therefore it should be made a rule in practice only to use a fresh crayon and an aseptic holder for each cauterization, or else to substitute a saturated solution of silver nitrate applied on absorbent wool. This is a simple but very salutary reform, for if syphilis can be transmitted in this way, other diseases such as diphtheria or tubercle may also be conveyed by the crayon.

Chancres of the Breast

Chancre of the breast, which is common in women, is extremely rare in men. In men it is always of venereal origin, and is caused by infection from the mouth of a woman affected with buccal syphilides.

In women mammary chancre is observed under two different conditions—in the course of suckling, and apart from suckling. These two orders of cases are very unequal in frequency, and chancres contracted by suckling are much more common than those contracted apart from suckling; according to my statistics, in the proportion of fifteen to one.

1. In non-suckling women chancre of the breast is nearly always caused by suction by the mouth of a man. Some years ago I observed a girl of seventeen who presented a chancre near the areola caused by the mouth of her fiancé. The latter was examined, and found to have secondary syphilis, with numerous mucous patches on the lips, tongue, and tonsils. In another case I observed four mammary chancres caused in the same way. I have also seen a case where a prostitute was affected with a chancre of the breast by intermammary contagion from the penis.

2. In suckling women mammary chancres may be derived from contamination by a syphilitic infant, or by different practices connected with suckling. The infection of wet-nurses by syphilitic infants is so frequent and so manifest that it could not fail to strike physicians who were not blinded by doctrinal

prejudice. This fact has been remarked almost from the time of appearance of syphilis in Europe. Thus, in 1497, Gaspard Torella wrote: "Sæpius vidi infantem infectum hoc morbo multas nutrices infecisse."[1] Also, in 1554, Amatus Lusitanus produced a curious history of what would nowadays be called syphilis "by ricochet" from a syphilitic infant. Then there is the famous observation of Ambrose Paré concerning a syphilitic wet-nurse who infected the suckling confided to her. The infant, who was also suckled by its mother, infected her; she in turn handed on the disease to her husband, who infected two other children who slept with him.

In fact, suckling is an active source of syphilitic infection in women, for the following reasons:

(1) Because infantile syphilis is common, and is not suspected as often as it should be.

(2) Because infantile syphilis includes among its most common manifestations nasal discharge and ulcerations of the mouth, two of the most contagious lesions.

(3) Because the conditions of suckling are eminently favorable to contagion—namely, repeated and prolonged contact of the child's lips with the breast; moistening of the parts by the saliva; predisposition of the nipple to fissures and excoriations, which form ports of entry for the contagion. In fact, the risk of inoculation is much greater in suckling than in coitus. It is common to escape from contagion by sexual intercourse, but I have seen very few wet-nurses escape contagion after having suckled a syphilitic suckling for a certain time. It is truly pitiable to see so many unfortunate nurses contract a detestable disease in the exercise of the most honest and useful of functions—that of maternity.

Mammary chancres in wet-nurses in the great majority of cases arise from infection by a child with *hereditary syphilis,* but sometimes they are due to *acquired syphilis* in the child from accidental contamination. Contagion from a heredosyphilitic infant is derived from mucous patches in the mouth and nasal secretions; in acquired syphilis of infants, from the chancre.

[1] "De dolore in Pudendagra Dialogus."

Therefore, *the chief danger for wet-nurses is heredo-syphilis*, which constitutes a plague for those nurses to whom foundlings are confided by the Administration. It is true that many precautions are taken against infection from these children of unknown parentage. At Paris these infants are carefully examined and kept under observation for a certain time. Both those who are diseased and those who are suspected are kept in hospital, and nourished by asses or by the bottle with sterilized milk. Those only who are not suspected are sent to the provinces to be suckled at the breast. But in spite of these precautions heredo-syphilitics sometimes escape the meshes of supervision, and contaminate the nurses to whom they are confided. Statistics show that in about five years one hundred and thirty-six of these infants sent away after examination were found to be syphilitic, and contaminated eighty-six wet-nurses!

At other times mammary contagion is derived from certain practices connected with suckling, such as disgorging the breast by suction, or drawing out the nipples. The practice of disgorging the breast by the mouth is a common one, and if the mouth of the person who performs the suction is affected with syphilides infection is likely to occur. The same result may follow suction practiced on nipples which are badly formed for suckling ("drawing the nipples"). In some places women pose as "specialists for the treatment of the breasts before and after suckling," and if they contract syphilis may give rise to an epidemic by infecting the breasts of their clients. A case in point was the epidemic of Condé in 1825, which was described by Bourgogne.[1] A similar epidemic was introduced into Tourcoing by a woman who called herself a "breast-drawer." Having contracted syphilis from one of her clients, this peculiar practitioner communicated it to a certain number of ladies, one of whom succumbed to cerebral syphilis.[2]

It must be borne in mind that syphilis contracted in this way,

[1] Bourgogne, "Considérations générales sur la Contagion de la Maladie vénérienne des Enfants trouvés à leurs Nourrices, suivies de la Relation d'une Affection syphilitique communiquée à plusieurs Femmes par la Succion du Sein." Lille, 1825.

[2] Leloir, "Leçons sur la Syphilis," 1886.

like all cases of "syphilis of the innocent," is more liable than other forms to create local epidemics, because it remains for some time unrecognized.[1] Thus, a woman infected on the breast by a "breast-drawer" will unsuspectingly suckle her child, and infect it; then, again unsuspecting, she will confide this child to another nurse who may be infected; afterwards she may infect her husband, her other children, and her relations, etc. In this way, by the numerous ricochets of contagion, a small district may be infected in very little time.

This is precisely what occurred in the epidemic at Condé, for we are told that "nearly all the women who contracted syphilis communicated it to their infants; some of these children transmitted the disease to their nurses before it was discovered; several of these nurses infected their own infants, to whom they gave the breast concurrently with the infected infant; lastly, healthy children, who used vessels which had been touched by the lips of the infected infants, also contracted this disgusting disease."

From the point of view of prophylaxis it is important to signalize that the mammary chancre may constitute a social danger, owing to the numerous risks of contamination. In fact, it is a form of syphilis against which precautions are seldom taken, and which often ends in making many victims. The lay public know little or nothing about syphilis, or when they do know take little heed of it. Many women, the mothers of families, have not the least idea of the dangers which their child may incur from unknown nurses and sucklings. As a proof of this, I may mention that the young wife of a medical man told me one day that the nurse who was suckling her baby had so much milk that she sometimes gave the breast to several strange infants in order to relieve her breast, and I had a great deal of trouble in making this young woman understand the danger of such imprudence. If this is the case among educated people, what must it be among the lower classes!

[1] Duncan Bulkley, "Syphilis in the Innocent."

Chancres of the Hand

These are especially interesting to medical men, owing to the frequency of their occurrence in the different branches of the profession. A number of medical men, medical students, midwives, dentists, and hospital nurses have been inoculated with syphilis on the hand, and many contaminations of this kind have ended in lamentable catastrophes, even in death.

Chancres of the hand are much more common in men than in women, and occur almost exclusively in adults. I have only seen one case in a child. It is needless to say that chancres of this region may be derived from any kind of contact with syphilitic matter, but when the facts of clinical observation are analyzed, we find that, with rare exceptions, contagion is conveyed in one of three ways: (1) By professional contamination; (2) by venereal contact; (3) by a bite. Of these three modes of contagion the first two are the most common. In hospital practice contagion of venereal origin predominates over professional contagion in the proportion of ten to one, but in private practice the latter is more frequent, in the proportion of thirty to nineteen. This is explained by the fact that when a medical man is infected on the hand it is usually in private practice.

Infection by venereal contact by the fingers is too obvious to require further mention. With regard to infection by *biting,* I have notes of about a dozen cases. These cases are seldom seen except in hospital practice, as they generally originate in a fight. One of the combatants bites the other on the hand; the wound heals, but a chancre develops in the cicatrix.

Hutchinson reported a case in which a policeman contracted a chancre near the metacarpo-phalangeal joint by striking a man in the mouth. His finger was lacerated by the man's teeth, and the chancre developed exactly in the situation of the wound. Taylor mentions the case of a young woman who contracted a chancre of the finger through pricking it with a pin while applying a dressing to a chancre on the penis of her lover! Cases of mediate contagion by manipulating linen soiled by syphilitic discharges have also been recorded.

Medical Contamination.—An important consideration is the large proportion of chancres of the hand which is furnished by the medical profession. I have so far observed fifty-five chancres of the hand in private practice, and no less than thirty-six of these were contracted by physicians, surgeons, medical students, and midwives in the exercise of their profession.

In most of these cases the exact manner in which contagion took place was established. In one case a medical man was infected while reducing a paraphimosis complicating a hard chancre. In another case a surgeon was inoculated by wounding his finger during an operation on a syphilitic subject. In a third case a midwife contracted a chancre of the finger after a difficult delivery in a woman affected with mucous patches of the vulva. In another case an accoucheur was infected on the hand while performing version. A dentist contracted a chancre of the finger after operating on a person affected with mucous patches of the mouth. A medical man infected himself on the penis by going to urinate after examining a syphilitic woman, without previously disinfecting his hands. A hospital nurse contracted a chancre of the hand after assisting at an operation on a syphilitic woman. And I could mention numerous other cases of a similar nature.

Naturally the frequency of contaminations of this kind is proportional to the risk which is run. They are most often observed in medical men who are specially exposed to them by the nature of their practice—that is, among physicians or surgeons attached to hospitals for venereal disease, among accouchers and midwives, etc.—but they also occur among general practitioners.

It is obvious that contagion may be also carried in the reverse direction—from the medical man to his patient. In this way a medical man may convey infection by his hands or by his instruments. If, for example, after having examined a syphilitic chancre, he manipulates a simple wound in another patient, he may convey the syphilitic virus to the latter. In the same way, if, after having placed his fingers in contact with a mucous patch, he performs a vaginal examination, or everts an eyelid, or touches an eczematous patch, etc., without having

previously disinfected his hands, he is likely to convey infection to these parts. Danger of this kind is especially to be feared in hospital practice, where crowds of patients and hurried examinations render such accidents more liable to occur.

A fortiori, the medical man is still more dangerous if he is imprudent enough to continue the practice of his profession when he is affected with a specific lesion on the hand or fingers, such as a chancre or a secondary syphilide. For example, Hutchinson reported the case of an accoucheur who, affected with a chancre of the finger, the nature of which he did not recognize, infected a woman with a chancre of the anus after examining her for hæmorrhoids. Another observation by the same author relates to a young woman who contracted three chancres of the vulva after being examined by a midwife who had a digital chancre. Colin mentions the case of an accoucheur who infected several of his patients by a secondary lesion of the finger.

The celebrated epidemic of Sainte Euphémie in 1727 was nothing more than a local epidemic of syphilis caused by a midwife. This woman continued the practice of her profession although affected with a specific lesion on the finger. According to Jean Beyer, who related the history of this epidemic, she transmitted the disease to more than fifty pregnant women. The contagion was afterwards propagated among the children and husbands, so that in four months more than eighty persons were infected.

Another epidemic of the same kind occurred at Brive in 1874. Although affected with a syphilitic ulceration of the finger, a midwife continued to practice. In this way she infected a number of women, and created an epidemic of syphilis in the small town of Brive. The infected women and the contagions derived from them by ricochet numbered more than one hundred victims. A similar epidemic occurred some years ago in England, also by the imprudence of a midwife. In this case there were forty-one victims, of whom thirty were women, nine husbands and two children.[1]

In the second place, the medical man may convey infection

[1] Duncan Bulkley, "Syphilis in the Innocent."

to patients by means of his instruments. We have already dealt with instrumental contamination, and also with infection through vaccination (p. 399).

In most cases of chancre of the hand the mode of penetration of the contagious matter has been explained by the presence of some lesion of the skin serving as a port of entry. This lesion has sometimes been a prick or erosion; sometimes a dermatosis, such as eczema; sometimes a chap or chilblain; sometimes the small lesions called agnails, which consist of small tongues of epidermis around the nail, the tearing of which leaves minute spots of dermis exposed to contagion.

These facts tend to show that contagion usually occurs on the hand, as elsewhere, by a breach of surface exposing the dermis, but whether this condition is indispensable is a problem which has been discussed without arriving at any positive conclusion. It is certainly a matter of daily observation that a skin provided with an epidermis in good condition will resist the introduction of contagious matter, for if it were otherwise, what would happen to those of us who are examining syphilitic sores daily? On the other hand, if contagious matter finds its way into a glandular orifice, or hair follicle, or is allowed to stagnate under the nail, it might penetrate by setting up inflammation around it. This is a hypothesis which I should not deny, but one which remains to be proved.

In any case, as far as we medical men are concerned, there are two prophylactic indications:

1. To strictly abstain from touching specific lesions, from the application of dressings, and from performing operations, vaginal examinations, or midwifery on subjects with known or unknown syphilitic antecedents, when we have on our hands the slightest traumatism, desquamation, or denudation of the dermis capable of serving as a point of entry for infectious germs.

2. Or if we are professionally compelled to perform such operations, to carefully protect the dermic denudation against the possibility of infectious contact.

This may be effected by collodion or by india-rubber finger-stalls. This precaution is all the more indispensable because

the infectious absorption which is produced on a denuded dermis appears to be *immediate,* and to be too rapid for ablution to be effectual, however soon it is performed. This is shown by a case related by Jullien: An eminent specialist had on his finger a slight excoriation. When examining a chancre of the penis, he placed the excoriated finger at the root of the penis, but unfortunately there was a second chancre there. As soon as he perceived this he immediately washed his finger, but all to no purpose. The absorption had already taken place, and infection followed in due course.

A final point for consideration is the bad reputation which is attached to chancres caused by professional contamination, especially digital chancres. What is the origin of this sad celebrity? Probably, I imagine, from some unfortunate cases which have struck the imagination and remained fixed in the mind. Every one knows, for example, the sad end of a physician of the Lourcine Hospital who, infected professionally on the finger, was soon attacked by the most severe symptoms, to which he rapidly succumbed. In fact, it is impossible to broach this subject among medical men without invoking some terrible remembrance.

Personally, I admit that I had not much belief in this idea till, after collecting my personal observations, I was no little surprised to find the result in complete harmony with this view. It is an undoubted fact that many medical men, having contracted syphilis on the face or on the hand, have been gravely affected by the disease, which has ended in some serious or even fatal tertiary lesion. What is the explanation of this fact?

In a special study on the prognosis of syphilis derived from extragenital chancres, I believe I have clearly demonstrated (1) that as a rule the extragenital situation of a chancre does not of itself constitute an element of gravity for the syphilis which follows this chancre; (2) that syphilis derived from facial or digital chancres is not of any special gravity. And yet my own statistics signalize as bad cases of syphilis those which occur in medical men from facial or digital chancres. How is this contradiction to be explained?

In my opinion it is a simple question of *soil*. If cases of syphilis arising from facial or digital infection have sometimes been especially severe in medical men, the cause is not, I think, in the peculiarity of the original localization, but in their substratum—that is to say, the fact that they develop in medical men. After long experience, I am led to believe that a medical man constitutes a bad soil for diseases of all kinds, and especially for syphilis, for the two following reasons:

1. Because he is *morally depressed* in the face of syphilis, knowing its future eventualities. It is easy to reassure a patient who is afraid of syphilis, but not a medical man, who knows the dangers of the disease, and exaggerates them when they concern himself. Therefore, when syphilis attacks a man under these conditions, it may become grave simply owing to the fact of depression and moral prostration. In fact, such a disposition constitutes for syphilis, as for any other disease, a real factor in gravity.

2. Secondly, because the medical man is often overworked, both mentally and physically, and this condition naturally confers an element of gravity to syphilis.

3. Thirdly, the medical man is generally badly treated. In accordance with the old adage which says "shoemakers are the most badly shod," medical men are the most badly treated, whatever disease they may have. First of all, they wish to treat themselves, and we know by experience what medical work we do on ourselves. Also a good many are treated badly owing to indifference, neglect, therapeutic skepticism, or even want of time. Others are badly treated by a plethora of consultants and consultations, by a multiplicity of medications, and by the absence of a definite plan of campaign. In short, for one reason or another, I have nearly always seen medical men who became syphilitic treated in a much less methodical and regular manner than most of their patients. On this subject Ricord remarked that "one of the worst conditions for contracting syphilis is to be a doctor."

For my part, I am inclined to think that these different reasons, especially when they are combined, are quite sufficient to confer on the syphilis of medical men a particular severity,

and applying this to the subject in question, I am led to believe that if syphilis contracted professionally by medical men often becomes serious or even grave, it owes this intensity much less to its facial or digital origin than to the unfavorable conditions of the soil on which it develops.

Chancres of the Anal, Perianal, and Rectal Regions

The etiology of these chancres is the same as those we have previously studied, and they may be derived from direct, indirect, or mediate contagion.

1. Direct contagion takes place by the mouth or by the penis; in the latter case by the practice of sodomy. Every year we have in our hospitals some of these professors of pederasty, who either cynically admit the origin of their contagion, or allow it to be guessed by their peculiar appearance, which has been so well described by Tardieu. It is needless to say that such beings are generally young men or adolescents.

But sometimes contagion results from violent criminal assaults on young subjects, sometimes on children. I have in my notes the history of a case of chancre of the anus in a child of two years. Coutagne relates a case in which the same individual gave rise to a chancre of the vulva in a child of six years, and an anal chancre in a girl aged eight. But adults are not always free from these assaults. For example, a young artist, who was traveling in Algeria, wished to enjoy the splendors of a summer night in the desert. He fell into the hands of a band of Arabs, who robbed him and beat him, and left him as a souvenir a syphilitic chancre of the anus complicated by violent rectal inflammation.

At other times contagion is conveyed to the same parts by the mouth. I have in my notes more than a dozen cases of this kind observed in subjects of the upper classes—subjects whom every one would judge to be the least likely to be contaminated in such a way.

2. Indirect contamination may take place by the fingers. Thus, one of my patients, whose sincerity I do not doubt, contracted simultaneously a chancre of the penis and a chancre

of the anus after connection with a woman affected with mucous patches of the vulva. The anal chancre was said to be caused by scratching at the time a patch of perineal eczema with his contaminated fingers.

In women contamination of the anus may be derived from the vulva by contagious discharges from the latter inoculating the former. Irrigation of the vagina, practiced by women after an infectious coitus, fails to dislodge the contagious matter from the folds of the anus, into which it has penetrated, and this probably explains a number of *unmerited* anal contaminations.

3. Mediate contagion may occur in these regions, as elsewhere, through the medium of sponges, towels, syringes, latrines, basins, surgical instruments, etc. I have notes of the case of an old lady who was infected at the anus by the canula of an irrigator which had been used by her chambermaid, who was affected with vulvar syphilides.

I am convinced that several cases of anal chancre which I have seen in private practice have been due to the *crayon of nitrate of silver* used for cauterization. My reasons for this belief are, first, that in several cases they have occurred in persons who were above suspicion—for instance, elderly ladies whose husbands were found to be healthy; secondly, that the chancres have developed in subjects affected for some time with certain anal lesions, such as hæmorrhoids, eczema, etc., for which the cauterization was practiced. Again, the chancres have invariably appeared from three to five weeks after the cauterization. All these considerations constitute presumptive evidence in favor of inoculation by the crayon of nitrate of silver.

CHAPTER XXXVI

THE PREVENTIVE TREATMENT OF PATERNAL SYPHILITIC HEREDITY DURING PREGNANCY

I PROPOSE to consider the following problem: The healthy wife of a syphilitic husband becomes pregnant, and the husband's syphilis is in a condition which may be hereditarily dangerous for the child. Under these conditions, can medical treatment preserve the child? and, if so, in what manner should this prophylactic treatment be carried out?

It is unnecessary to say that, if treatment can intervene to protect the fœtus in such conditions, it can only be through the medium of the mother. So that the problem is reduced to this: Is there any hope of protecting the fœtus by treating the mother—that is to say, by antisyphilitic treatment administered to a *healthy* mother?

The situation is very different from that where a pregnant syphilitic woman is treated with a view to a combined effect on the mother and child. In this case it is logical that the fœtus should be benefited by the corrective influence of mercury on the mother's syphilis. But in the present case it is quite another matter, for the mother has no syphilis to be attenuated, and it is the fœtus alone which is concerned. The mother only acts as a filter, allowing the remedy to penetrate to the fœtus. I may state in advance that the results of such treatment are quite satisfactory in the great majority of cases.

1. Mediate treatment by a healthy mother of a fœtus threatened with syphilis by paternal heredity constitutes a powerful safeguard for the fœtus.

2. In very many cases, when this treatment is carried out

properly and in time, it saves the infant from the numerous dangers of paternal heredity, especially from death.[1]

3. This happy result is frequent enough to have attracted the attention of many observers, and there is almost unanimous agreement between syphilographers and accoucheurs as to the necessity for this special therapeutic intervention.

4. Lastly, this concurrence of opinion imposes on every medical man the obligation to act in this way—that is to say, to institute mediate treatment of the infant by the mother.

This being said by way of preface, we now come to the practical side of the question. This may be summed up in the two following schemes:

1. In the first order of cases we are consulted by a syphilitic who is about to become a father, and who asks us whether something cannot be done to prevent his child inheriting the disease. This is not an uncommon situation—indeed, from my personal experience, I should say that even if the syphilitic takes little care of his disease before marriage, he is very apprehensive of it as soon as he is about to become a father. This is a curious phenomenon in psychology which I have observed hundreds of times.

Thus, a number of syphilitic subjects hardly think of their disease when the fancy takes them to marry. They have nothing, apparently, the matter, and they believe themselves cured. Attracted by the fine eyes of a young girl, or by a substantial dowry, they marry with a light heart. Then, from the moment when their wives become pregnant, these same individuals are psychically transformed, and are haunted with the remembrance of their former disease. What will be the result of this disease, which has such an evil reputation for hereditary consequences? Will the child be born alive, and, if so, what will be

[1] This is the conclusion to which I have been led by my researches on syphilitic heredity, as is shown by the following passage taken from my book on this subject ("L'Hérédité Syphilitique," 1891): "On the whole, paternal syphilitic heredity only manifests itself comparatively rarely by transmission of syphilis itself; while it is more often dangerous in that it is capable of transmitting to the infant something even graver than syphilis—namely, what I have called *inaptitude for life*, manifested either by death *in utero*, or by death a short time after birth, as a result of native debility, primary decay, or insufficient vital resistance. Therefore, the danger *par excellence* of paternal heredity is the death of the child."

its future? And, what is worse, if it is born with syphilis, it may proclaim to every one that its father had syphilis! Moreover, it may contaminate its mother!

All these apprehensions occupy the minds of the same subjects, who up to this moment had treated syphilis with so much indifference. I have even been requested to induce abortion under these circumstances, and when I explained that such a proceeding would be a double crime both for the father and myself, I have been told that "there should be a law authorizing the suppression of children destined to be born syphilitic, for, considering the future which awaits them, to suppress them would be to confer a benefit on them, as well as on their family and on society." Such is the doctrine of a mind temporarily distraught.

2. In the second order of cases we have to deal, not with a first pregnancy, but with a married woman who has already had several pregnancies, with unfortunate results, and is pregnant again. In this case we are consulted by the husband with a view to preventing another catastrophe.

Such are the two situations, which include all cases relative to this special subject.

The safeguard for the fœtus which is menaced by paternal syphilis lies in *mediate treatment of the fœtus through the mother,* by administering specific treatment to the mother, although she has no signs of syphilis. This mode of intervention is at the same time *rational, free from danger for the mother, and beneficial to the fœtus.*

1. That it is *rational* has been experimentally proved. In 1878, Porak established that iodide of potassium, administered to the mother, appeared in the urine of the fœtus in forty minutes. The same with mercury, which also passes easily from the mother to the fœtus. Cathelineau and Stef found mercury in the bodies of fœtuses whose mothers had been treated by it. In one case they found that one hundred grammes of fœtus contained about seven milligrammes of mercury. They even found mercury in the meconium and in the amniotic fluid.

Hence, since drugs pass across the placenta, we can have

fœtal therapeutics, and it is this which we make use of in the cases in question.

2. In the second place, this mode of treatment is *free from danger for the mother*. It was feared that this treatment would increase the gastric troubles of pregnancy, or even cause anæmia. But experience has contradicted these apprehensions, which are all theoretical, and has shown that a pregnant woman, even non-syphilitic, can support very well specific treatment if this is given carefully and methodically. For my part, I have not met with the slightest inconvenience, and have found no difference between syphilitic and non-syphilitic women as regards tolerance to mercury or iodide of potassium. All my colleagues whom I have questioned on this point have expressed the same opinion.

3. Thirdly, that this treatment is *beneficial to the child* has been shown by clinical experience. I do not say that this treatment will always save the infant from death, but I maintain that it constitutes a safeguard in most cases. This is shown by facts of two kinds.

In the first group are included cases such as the following: A healthy woman married to a man affected with syphilis capable of possible or probable injury to the product of conception; a first pregnancy; specific treatment of the mother. Under these conditions the pregnancy generally ends at term, the child is born living and generally healthy. This result is not constant, but is usual when treatment has been begun soon after the commencement of pregnancy.

But here it may be objected that these facts possess no great signification, for paternal heredity is not always fatal in syphilis; therefore the child might have been born healthy if the mother had not been treated. This objection is not without weight. I may remark, however, that if immunity of the child is a frequent result when maternal treatment is instituted, it is highly probable that this treatment has something to do with the favorable result, for it is not usual for paternal heredity to remain inactive when abandoned to itself without a corrective.

A second group of facts is furnished by the second of the

situations which I mentioned above—namely, when several previous pregnancies have ended in disasters. For example, a healthy woman married to a syphilitic man: several pregnancies ending in abortions, still-births, or the birth of syphilitic children; no treatment up to the present, a fresh pregnancy, during which the mother is treated; this time a healthy child is born.

Cases of this kind, which are frequently met with in practice, prove conclusively the efficacy of therapeutic intervention. Personally, I have met with more than fifty such cases, of which the following are a few examples:

1. A young man contracted syphilis in 1881, and was treated for only five months. In 1883 he married. The first pregnancy ended in a child who died nine days after birth. The second pregnancy ended in the birth of a syphilitic child, which also died. The wife became pregnant a third time, but showed no signs of syphilis. I instituted specific treatment, which was continued during the whole of the pregnancy, and consisted in protoiodide of mercury in daily doses of one-third grain, alternated with fifteen to thirty grains of iodide of potassium daily. This resulted in the birth of a healthy child at term.

2. Ribemont-Dessaignes was consulted by a young couple under the following conditions: The husband had been affected with syphilis for about twelve years, and had only taken treatment for two months. His wife had been pregnant four times, and although remaining free from syphilitic infection, had aborted every time. Specific treatment by protoiodide pills and Gibert's syrup was administered during the next pregnancy, and resulted in the birth of a healthy child, who showed no sign of hereditary syphilis for two years and a half.

3. In a case of Pinard's, a healthy wife of a syphilitic subject had four abortions in five years. During the fifth pregnancy specific treatment resulted in the birth of a living child.

4. A young man contracted syphilis, and was only treated for two months. Several years later he married. His wife remained free from infection, but aborted six times. During

the seventh pregnancy specific treatment was instituted, and a healthy child was born, which was under my observation till the age of eight without developing any signs of syphilis.

To these I could add a number of other similar cases, some personal, and others from different sources. I could also mention observations of another kind, showing that, after this maternal treatment, instituted under the same conditions, there has been an absence of the accidents which were produced in former pregnancies, which were left without treatment. For example, hydramnios, alterations in the placenta, fœtal dystrophies, hydrocephalus, etc. But this additional evidence appears to me unnecessary, and I consider that the case is proved. Nearly all syphilographers and accoucheurs are agreed on this point, including the leading obstetricians, such as Pinard, Budin, Porak, Ribemont-Dessaignes, Bar, and others, with whom I have often discussed this subject.

Therefore, we may state as a rule in practice *that, when a woman is pregnant with a child threatened, by paternal antecedents, with syphilitic heredity, syphilitic treatment of the mother, although healthy, constitutes for this child a real and powerful safeguard for which there is a precise and formal indication.*

We must not conclude from this that antisyphilitic treatment should be instituted in every case where a woman is pregnant by a syphilitic man. No general rule can be formulated, and the medical man must treat each case according to its particular indications. Obviously, intervention is required in cases where the paternal syphilis is still dangerous for the fœtus. Inversely, it would be irrational in the opposite conditions, when the paternal syphilis has become manifestly inoffensive by time and treatment, by a long period of immunity, and by the birth of living and healthy children.

In such extreme cases the indications are clear, but there are many intermediate cases where the line of conduct is less clearly defined. Under these circumstances, we must be guided by a minute and careful analysis of the conditions of the paternal syphilis. This is one of the most complex questions in the whole of syphilography. In cases where the reasons for and

against intervention seem to be equally balanced, I think the best practice is to institute treatment of the mother, because to do nothing may harm the fœtus, and intervention only risks being unnecessary.

We now come to the practical application of these principles. Having decided to give specific treatment to a pregnant and healthy woman, with a view to protect her child, which is threatened with paternal syphilis, how are we to proceed? Here we encounter two different conditions, one of which is simple, the other embarrassing.

In the first condition *the wife has a knowledge of the situation*—that is to say, for one reason or another, she is aware of the syphilitic condition of her husband, either by the husband's confession, which is the exception, or by circumstantial evidence, such as the previous birth of a syphilitic child, whose disease could not be dissimulated. Under such circumstances, there is no difficulty. When we inform the wife of our intention to treat her, she will understand the reason for it; and if we add that the object of this treatment is to safeguard her child, she will accept this new maternal duty without hesitation. I have never known a woman refuse treatment when she realizes that it is for the benefit of her child.

But cases of this kind are comparatively uncommon, and more often *the wife is ignorant of the state of affairs.* We are then confronted with the difficulty of explaining to a healthy woman that she requires treatment by mercury.

To this problem there are only two solutions—either to confess the truth, or to leave her in ignorance of the motive for treatment and the nature of the drug. The choice between these two lines of conduct depends on the husband, who alone can decide whether his wife should be informed of the situation. But if, as is most probable, the husband requests us to treat his wife without telling her the reason why, we become involved with her husband in a process of dissimulation in the therapeutic campaign which we have undertaken.

Dissimulation is here unavoidable, for, in the first place, we are obliged to find a pretext for treating a woman who feels no need for it; secondly, we must disguise the only remedy which

is useful under pseudonyms which will be acceptable. For example, we must disguise mercurial pills under the name of tonic pills, or give Gibert's syrup as a "syrup for the vomiting of pregnancy," etc. Such a situation is disagreeable for the medical man, and may be complicated by unpleasant and awkward incidents. The wife's mother may intervene, and request a reason for our treatment of her daughter during her pregnancy. She may even suspect the truth, and involve us in an accumulation of falsehoods. The climax may come by our being caught in the act of dissimulation. This happened to Professor Tarnier and myself in a case of this kind, where, to save a husband, we denied to his mother-in-law the nature of the mercurial pills which we had prescribed to her daughter. One day she informed me that she had taken the pills to a chemist, who found that they contained mercury! I passed a bad quarter of an hour with this lady!

The situation is, therefore, not free from professional dilemmas. Nevertheless, it is one of those which it is our duty to accept, for, on the one hand, it is not incompatible with the dignity of our craft; on the other hand, it has a beneficial object—the protection of the child. Moreover, this situation is not one of our making; we simply submit to it, in spite of its unpleasantness.

I repeat that this peculiar rôle which we are called upon to play must be accepted for the following reasons:

1. Because we are absolutely free from all personal interest and profit in the affair.

2. Because our dissimulation has a beneficial object—that of keeping the peace of the family by throwing a veil over the pathological past of the husband.

3. And especially because our chief aim is to protect a child by means of treatment which, if it were not kept secret, would often be neglected, to the detriment of this child.

Moreover, the propriety of this conduct has sometimes been admitted by the mother. Among cases which I could cite in proof of this is the epilogue of the case I have just mentioned, in which Professor Tarnier and myself were concerned, for, on visiting our patient after the unfortunate analysis of the pills,

we were thanked "for having done what we had reasons for doing."

The last question to be considered is that of the details of treatment.

1. The first condition which is indispensable for success is to intervene in time, as soon after the beginning of pregnancy as possible. On this point I am in accord with Professor Pinard, who says, "intervention dating from the early months has the greater chance of success the earlier it is begun. After the fifth month it is too late, and has little chance."

2. As regards the therapeutic agent, mercury is here the remedy to choose. It is much superior to iodide as a preventive remedy, and has a more corrective action on the hereditary influence. Moreover, mercury is much better tolerated by women than iodide, which often causes coryza and other disagreeable symptoms.

3. As to the mode of administration, inunction and injection are obviously out of question, and mercury must be given by the mouth. Protoiodide pills seem to be the most suitable form of mercury. Protoiodide is an active remedy which is well tolerated, and is preferable to sublimate, which often irritates the stomach, and has an unpleasant taste.

4. With regard to the dose of mercury, we must remember that we are treating a *fœtus*, and not an adult. This fœtal dose cannot be definitely fixed, but I have found from two to five centigrammes (two-sevenths to five-sevenths grain) of protoiodide sufficient in these cases.

5. Treatment should be continued during the whole of pregnancy. Pinard recommends continuous treatment without intermission, but I prefer the intermittent method—twenty days' treatment and ten days' rest every month.

Conclusion.—1. When a fœtus is menaced by paternal syphilis, a safeguard may be offered it by treatment of the mother, although healthy, during pregnancy.

2. Success has been obtained by this mediate treatment, and these successes are now sufficiently numerous to render it the duty of the medical man to undertake this treatment under such circumstances.

3. This treatment should begin as soon as possible after the beginning of pregnancy.

4. Mercury constitutes the essential basis of this treatment.

5. Mercury must be administered according to the individual indications of the particular cases.

CHAPTER XXXVII

THE PROPHYLAXIS OF SYPHILIS BY TREATMENT

The different measures which may concur in the prophylaxis of syphilis may be divided into three groups:

1. Measures of a moral and religious nature.
2. Measures for the suppression of prostitution and solicitation.
3. Medical measures, constituting prophylaxis by treatment.

Those of the first group, which concern moral education and prophylaxis by purification of morals, are no doubt the best of all, but they do not come within the province of the medical profession.

The second group includes the administrative measures intended to deal with prostitution and public solicitation. Some years ago these formed the subject of a long discussion,[1] which I have not now the intention of renewing, but concerning which I will make a few remarks.

Applied long ago to the suppression of prostitution, the administrative and police measures have no doubt produced all that they are capable of producing with regard to the prophylaxis of syphilis. But, while recognizing their benefits, they must be regarded as insufficient for the object which they have in view, because their action is necessarily limited to public restriction. The police only supervise a few thousand women, when there are ten times as many more who spread syphilis among the population. These measures have done the little which they could do, but they are powerless to stem the tide of venereal contamination. I might even add that the useful services of these measures of suppression will probably decline in the future, for the following reasons:

[1] *Vide* Chapter XXIX.

1. The continuous and progressive diminution in the number of brothels over which police supervision can exercise itself most efficaciously.

2. Inversely, the ever-increasing number of centers for clandestine prostitution, over which supervision becomes difficult or even impossible. It is a positive fact that prostitution has taken refuge from the public brothels in the wine shops, theaters, cafés, etc., which multiply in considerable proportions, especially places connected with the wine shops.

3. Lastly, and above all, the singular tendency of the present public opinion, which is opposed to all measures of suppression and coercion, even when directed against the most unworthy individuals, which confounds license with liberty, and consequently ends too often in tolerating license under the pretext of respect for liberty.

But I will pass by all these questions, and others of the same kind, which will take me far from my subject. The only point I wish to dwell upon, because it is essential to the cause which I propose to uphold, is this: *From long experience it is definitely proved that the administrative and police measures which constitute the present system are insufficient to defend us against syphilis.* The proof of this is that, in spite of this system, syphilis persists among us, as in the past, attached to society like an incurable ulcer. After what I have seen, it is impossible for me to believe that it has diminished in frequency during the forty years which I have devoted to its special study. On the contrary, it is my firm belief that syphilis has increased. This is only my impression, for it is impossible to institute convincing statistics on this point. The same opinion is held by many of my colleagues, whom I have often heard remark that we see syphilis nowadays more than ever. In any case, I can affirm without fear of contradiction that syphilis is in what may be called a flourishing condition at the present day. It abounds in our hospitals, and as the special hospitals are insufficient, it overflows into the general hospitals, where cases of visceral and cerebral syphilis are usually to be found. It crowds with patients the hospitals for nervous disease, the lunatic asylums, and the infirmaries. In fact, syphilis is met with everywhere.

But if syphilis invades us to this extent, it is necessary to recognize, from this alone, that society is only imperfectly protected against it by the administrative measures which are at present in force. But there still remains a third measure of protection against syphilis, and this consists in sterilizing as far as possible the germs of contagion, and preventing their dissemination. This therapeutic safeguard I have called *prevention by treatment.*

This is certainly not a novelty, for it has existed, at any rate in principle, since the day when the first syphilitic, for his own benefit and indirectly for the benefit of others, attempted to get rid of his disease. Since then it has constituted what is called the treatment of syphilis. But has it ever been carried out as it should have been from the point of view of prophylaxis? Even in our time, has every preventive benefit been obtained from it? In other words, do we even to-day treat syphilis so as to render it not only less harmful for the patient, but also less harmful for society? Do we treat it in a manner to convert the personal treatment of the patient into a means of defense for others, a means of general protection? I think not. It is precisely with a view to demonstrate this fact that I propose to compare the actual treatment of syphilis with what it ought to be if we wish to derive any benefit from it for the defense of society against syphilis.

What may be called *prevention by treatment* naturally includes all the therapeutic methods which aim at the sterilization of syphilis with regard to its dangers for others. The object of this preventive method is to cause syphilis to remain localized in the subject who is affected, without spreading to other victims—in a word, to render this syphilis sterile as an origin of other syphilis, and to realize this benefit by medical measures only. But in the present state of affairs the treatment of syphilis does not fulfill this intention.

If there is one fact which is incontestable, it is this: *syphilis, in order to become harmless both to the patient and to others, requires prolonged treatment.* That there are still differences of opinion as to the length of this treatment, and the methods of directing it, I admit, but it is generally agreed that it must

be prolonged. But in the actual state of things, how few cases of syphilis are submitted to this prolonged depuration, which is doubly necessary for the protection of the patient and for others! From my personal experience, I do not hesitate in saying that out of twenty cases of syphilis taken at hazard, especially among hospital patients, there are hardly more than one or two who have undergone treatment worthy of the name—that is to say, treatment of a nature to render the disease harmless for the patient and for others.

On the other hand, cases in which treatment has been of very short duration may be counted by thousands. In some statistics which I prepared for another purpose, I found that out of two thousand four hundred patients affected with tertiary syphilis, about five hundred had undergone less than three months' treatment; and out of these five hundred there were one hundred and twenty-one in whom treatment was reduced to a few weeks, or even a few days only.

It may be asked what prevents us from treating patients as we wish to, when we have good hospitals where gratuitous advice and medicine is prescribed by an excellent medical staff. I admit that we have all this, but this is not sufficient, for the following reasons:

1. First of all, let us consider the hospitals. It is true that we have good hospitals, which, with certain reservations, I admit are sufficient in number. But the capital point which I wish to urge is this: *it is not by hospitals that we can treat and cure syphilis,* as it should be treated, for the greatest benefit of patients and for the protection of others. I will explain.

That a hospital is necessary for the treatment of syphilitic affections is obvious, for syphilis causes a number of lesions which can only be well treated by rest in bed and daily medical supervision. Moreover, we must not forget the inestimable services rendered by hospitals in prophylaxis by sequestrating subjects who might disseminate contagion. From this point of view especially hospital confinement is the surest agent for the sterilization of syphilis.

But is a hospital required for the treatment of a number of other syphilitic affections, infinitely more numerous than the

preceding, which do not affect the health and vigor of the individual, and which allow him to continue his usual employment? *A fortiori,* is a hospital required for *latent* syphilis, which, although latent, still requires prolonged treatment from the preventive point of view? Would it not be absurd to sequestrate a person free from any morbid symptom, in order to absorb a few pills or a few doses of iodide?

For example, what would be the use of hospitalizing a patient affected with palmar or plantar syphilides, with onyxis, alopecia, or adenitis? To take the most common of all syphilitic lesions—the mucous patch—which often recurs with obstinate persistence during many years. Apart from the guarantee of security for others offered by internment, what advantage would be derived from hospitalization for a mucous patch of the mouth?

It is evident that for lesions of this kind, and many others which I could mention, the hospital is, if not useless, at least superfluous. If the authorities provided an excess of beds, we might be justified in hospitalizing patients affected with such lesions; but this is not the case, and to give beds to syphilitic cases of this kind would keep more deserving cases waiting. Moreover, if the beds were offered to such subjects, they would generally be refused, except by loafers. Nevertheless, these subjects are patients who require prolonged treatment; but what is required for them is not hospitalization, but easy access to gratuitous out-patient departments.

2. With regard to *gratuitous hospital consultations,* I wish to point out that essential reforms are required.

In the first place, these so-called gratuitous consultations, under the present conditions, are in reality paid for dearly by the patients, because they lose half a day's or a day's work.

In the second place, these consultations are essentially obnoxious. In principle, they should be conducted so that patients are induced to return, but as a matter of fact, they act in the opposite direction.

They are obnoxious for several reasons—owing to the crowds of patients of both sexes, resulting in possible recognition; owing to their promiscuous nature, causing the fear of conta-

gion from other patients; and especially owing to the hours of waiting. But much more obnoxious still is *the public confession of syphilis.*

It is quite common for patients who have gone through the ordeal of a public disclosure of their disease before a crowd of other patients not to return till some months or years later, when they are compelled to seek advice for some tertiary lesion. Thus, a number of syphilitic patients are not treated, because of the public exposure which this involves. Consequently, they are liable to spread this disease to others.

The conclusion is that public consultations for syphilis are prejudicial to every one—to the patients, because they keep them away from the hospitals; and to society, owing to the ricochets of untreated syphilis.

Another objection to the present system of hospital consultations is the excessive number of patients. It is impossible for a physician to give sufficient attention to more than a certain number of patients, and when he has diagnosed and prescribed for fifty patients, he has done all he can do well. Consequently, the last-comers are imperfectly examined and treated.

The consequence of this is that, although the treatment of *syphilitic lesions* may leave nothing to be desired, it is not the same with *the treatment of syphilis.* The diagnosis and treatment of the lesions of syphilis, except in difficult cases, only take a short time, while it is quite another affair to institute the treatment of syphilis. Take, for example, the case of a patient who has had syphilis for two years, and has no further lesions. It is impossible to give him advice without inquiring into the whole history of his disease, and what treatment he has previously undergone. This may take ten minutes, which is a long time for consultations where every moment is valuable.

The same from the point of view of *prophylaxis*—there is no time to explain to the syphilitic patients all the possible dangers of spreading their disease to others. The consequence is that the patients contaminate others, and the responsibility of these contaminations is thrown on the physician. I know of many cases in which the medical man was blamed by the patient for

disasters which occurred owing to his not being informed of the possible dangers which he might incur.

It is, therefore, a matter of general importance that syphilitic patients should be instructed concerning the numerous dangers which their disease may cause to others. This instruction, which the physician carries out in his consulting-room, should be also carried out in hospital practice. But this cannot be done when the crowds of patients reduce the time allowed for each patient to a minimum. Therefore, *the more crowded the hospital practice, the less does it serve the interests of prophylaxis.*

The Venereological Dispensary

After pointing out the defects in the hospital treatment of syphilitic patients, it remains to be considered how these can be remedied. In my opinion, this should be done by the institution of *dispensaries for syphilis.*

1. First of all, these dispensaries should be numerous, in order to remedy the imperfections and failings of the actual system which I have just mentioned, the chief of which is overcrowding. I think that a dozen of these dispensaries attached to our hospitals would be sufficient in a town like Paris, but this number remains to be fixed by experience.

2. These polyclinics should be systematically distributed over different quarters of the city, so as to save patients the loss of time caused by long journeys.

3. The consultations should take place at days and hours which are convenient to the patients, and a special day should be reserved for women. Consultations should also be held in the evenings, which is the most convenient time for most patients.

4. Printed instructions should be given to each patient as follows:

(1) Syphilis is a disease which is curable, but is only cured by a long course of treatment lasting for several years, even when there is no external sign of the disease.

(2) It is extremely contagious, especially by the sores and erosions, however small they may be, which generally occur on

the genital organs and in the mouth, but which may be produced on any part of the body. A patient with syphilis must, therefore, abstain from any sexual intercourse when he has the slightest lesion on the genital organs. He must also abstain from kissing when he has sores on the lips or tongue; for a kiss, even on the healthy skin, may be contagious.

Contagion may also be transmitted through the medium of any object which has been in contact with the morbid secretions of the disease—glasses, spoons, forks, bottles, pipes, cigars, cigarettes, linen, towels, clothing, etc.

(3) Syphilis is hereditarily transmitted to children (who generally die) when it has not been sufficiently treated. A syphilitic subject should not marry till after at least three or four years' methodical treatment, and then only by permission of a doctor.

(4) A child born of a syphilitic father or mother should never be confided to a wet-nurse, because it may transmit syphilis to this nurse.

(5) When a syphilitic subject is affected with any other illness, he should always inform his doctor of his former syphilis, for this declaration may be useful for the direction of treatment and the cure of the complaint.

5. Every patient should have the notes of his case, and the treatment ordered, written on the hospital paper he brings with him, so that the chronological history of his disease, and the nature and duration of the treatment, can be seen at a glance, without wasting time in repeated interrogation. This system, which I have instituted at the St. Louis Hospital, is especially important in such a disease as syphilis, which requires treatment for several years, and in which a complete knowledge of the morbid antecedents and the former treatment is essential.

6. The ideal system would be for hospital consultation for syphilis to be conducted as nearly as possible as it is in private practice—that is to say, by a *tête-à-tête* between the patient and physician, instead of by a public confession of syphilis *coram populo*. This would take up little more time if dressing-rooms were attached to the consulting-rooms, the chief waste of time being caused by the dressing and undressing of the patients. Conducted in this way, I do not think that consulta-

tions made one by one would be much longer than with the odious system of consultation in batches.

By means of this humanitarian reform, a part of what I have called *prevention by treatment* might be realized. The public welfare is inseparable from the welfare of the individual, and it is to the interest of the public that the individual should be treated thoroughly. But the treatment of the individual can only be attained by offering him every facility for carrying it out. It is for the welfare of the public to sterilize the syphilis of the individual.

7. It would be of general as well as scientific interest that the treatment of syphilis and venereal diseases should be confided to a medical staff who, in all degrees of seniority, have been trained by special courses of study, and who should devote their time exclusively to this subject, which should have its own autonomy, in the same way as obstetrics, etc. This system would avoid the invidious situation in which a physician or surgeon is frequently placed when he is appointed to take charge of a special department for which he has had no previous training.

All special knowledge requires special apprenticeship. The late Professor Tarnier once remarked that "it takes ten years to become a good obstetric physician," and I can affirm that it takes almost the same time to become a competent venereologist.

8. Besides being profitable to patients, the system of venereological dispensaries would be no less useful in creating a new group of *centers of teaching*.

For the prophylaxis of syphilis it is necessary that all medical men should have a sufficient education in this subject; but this is far from the case, and the absence of sufficient special education is the result of the defective organization of the present system of medical education. This result is deporable both from the therapeutic and from the prophylactic points of view. Nevertheless, it has several times been drawn attention to.

In the report of the Commission of the Academy of Medicine in 1887[1] it was pointed out that the majority of students

[1] *Vide* Chapter XXIX

are launched into practice with only a rudimentary and superficial knowledge of venereal disease in general and syphilis in particular; that this resulted in numerous errors in practice, and social consequences of the gravest importance.

The only result of this Commission has been to introduce the following resolution: "It is desirable that a certificate of attendance on the practice of venereal disease should be required from every candidate for the doctorate." And this resolution has not yet been adopted (1904)! Yet every one recognizes that one of the best means of struggling against syphilis and diminishing its spread is by imparting to the rising generation of medical men better instruction on this subject than they have hitherto received. Nevertheless, nothing is done, and our methods of teaching do not alter.

Moreover, there are the same complaints abroad on the same subject. Thus, Professor Kaposi, of Vienna, at the first International Congress at Brussels for the prophylaxis of syphilis and venereal diseases, remarked that, "whatever measures may be taken by public authorities against the propagation of syphilis, it is always the medical profession who will take the chief part in the struggle. It is, therefore, important—(1) that departments for dermatology, syphilography, and venereology should be instituted at all medical schools; (2) that these special subjects should be made obligatory at the examinations."

Again, Professor Tommasoli complains of the insufficiency of the teaching of venereal diseases in Italy, in spite of there being seventeen chairs for dermo-syphilography. In France we are much worse off, and are far from having seventeen chairs for dermo-syphilography.[1]

This deporable state of things might be remedied by the institution of venereological dispensaries, at which special courses should be held by the staff for the instruction of students and medical practitioners. These dispensaries might also be utilized for the instruction of *midwives,* with special reference to the dangers of digital contamination and the subject of syphilitic sucklings and wet-nurses.

[1] TRANSLATOR'S NOTE.—If the teaching of syphilis and venereal diseases is deficient in France, what must it be in England, where there is not a single chair for the teaching of these subjects?

CHAPTER XXXVIII

THE SOCIAL DANGERS OF SYPHILIS

SYPHILIS constitutes a social danger from four points of view:

1. By the damage which it inflicts on the *individual.*
2. By the damage which it inflicts on the *family.*
3. By its *hereditary* consequences.
4. By its degenerative effect on the *race.*

DAMAGE TO THE INDIVIDUAL

That syphilis constitutes a social danger by the injury which it inflicts on the patient is a matter of common knowledge, and there is no need for me to show that syphilis is a serious and sometimes very grave disease. It is also well known that it is an affection which is prolific in manifestations of all kinds, which may affect all parts of the body, and appear at both early and late periods, and sometimes even last for life.

From the point of view of prognosis the numerous and diverse manifestations of syphilis may be divided into two groups. The first are relatively benign, superficial, and transitory. They may be troublesome for different reasons, painful in varying degrees, compromising, etc., but, on the whole, with rare exceptions, such as iritis, sudden deafness, nephritis, severe icterus, and early malignant syphilis, they are not specially dangerous, and do not threaten the integrity of an organ or of life.

The second, on the contrary, are always more or less serious. They affect the tissues deeply, or, in technical language, they are parenchymatous; they are disorganizing, ulcerative, sclerosing, and destructive. Consequently, they are always grave, and sometimes compromise the life of an organ, or even the life of the individual.

Of these manifestations, those of the first group belong to the secondary period, and those of the second constitute tertiarism. Tertiarism, therefore, comprises the lesions which cause the gravity of syphilis, and renders it a dangerous and sometimes fatal disease—much more often fatal than was formerly supposed or is believed by the public.

With regard to tertiarism, which includes nearly the whole of the individual dangers of syphilis, there are two questions to be considered: (1) The frequency of tertiary lesions of all kinds and at all periods; (2) the nature of these tertiary lesions, and the frequency of the most severe ones.

1. Concerning the first question, I can be brief, because the determination of the frequency with which syphilis ends in tertiarism is a problem which is so far unsolved, and possibly will always remain so. It is impossible to follow our patients to the end of their lives, and the number of cases in which we can say that patients were free from tertiary symptoms up to the time of their death is very few. We only see those who are affected with tertiarism, while those who escape it are mostly not observed.

All that we know is that tertiarism varies according to different conditions, such as age, constitution, temperament, general health, hereditary or acquired predispositions, the nature of the lesion, complications, treatment, etc. For instance, we know that tertiarism is common in subjects who are either not treated at all or insufficiently treated. This is shown by the number of tertiary lesions which are commonly observed as the result of *ignored syphilis,* which has been abandoned to its own evolution in the absence of therapeutic repression. Inversely, we know that tertiarism is relatively rare in subjects who have undergone methodical and prolonged treatment.

But, apart from these few ideas on the frequency of tertiarism resulting from circumstances of the second degree, we know nothing definite concerning the absolute frequency. We do not know the exact percentage of cases of syphilis which end in tertiarism.

That tertiarism is quite common in both sexes and in all classes of society is shown by experience. At the St. Louis

Hospital I see nearly forty cases at each of my weekly consultations, and in general hospitals visceral lesions of specific origin are met with in every department. The same in private practice—tertiary syphilis abounds in the most diverse forms. In my own practice alone I have observed more than five thousand cases.

It is, therefore, unnecessary to dwell further on the first point. The excessive frequency of tertiary syphilis in society is an incontestable fact. But it is to tertiarism, I repeat, that belong almost the whole of the accidents which constitute the individual danger of syphilis.

2. The second point concerns the nature of the lesions which compose tertiarism, and the frequency of the gravest of them.

This double question is answered by the statistics obtained from four thousand four hundred patients (four thousand men and four hundred women) whom I have observed personally in private practice. This is a document the genuine nature of which I can guarantee.

NATURE OF TERTIARY LESIONS

	Cases		Cases
Tertiary syphilides	1,451	Aorta	13
Subcutaneous gummata	204	Liver	9
Genital organs	271	Kidney	31
Tongue	262	Testicle	245
Palate	215	Eye	110
Pharynx	94	Ear	24
Lips	42	Arteries	3
Tonsils	12	Brain	758
Throat	11	Cerebro-spinal lesions	29
Nasal fossæ	5	Monoplegias	6
Bones	519	Spinal cord	135
Bones of nose and palate	229	Tabes	631
Arthropathies	22	Cerebro-spinal tabes	45
Gummata of tendons	3	Neuritis and muscular atrophy	24
Gummata of muscles	16	General paralysis	83
Œsophagus and rectum	8	Ocular paralysis	110
Ano-rectal lesions	13	Facial hemiplegia	23
Larynx and trachea	32	Divers nervous affections	13
Lung	23	Other localizations	19
Heart	6		5,749

A glance at this table is sufficient to show the extreme gravity of tertiarism, and that it is constituted by lesions affecting the most important organs and systems, such as the nervous system, the osseous system, the vascular system, the viscera, the

testicle, tongue, palate, eye, ear, etc. It will suffice for my purpose to put forward the two following considerations derived from these figures:

1. First of all, they show the enormous proportion taken by *syphilis of the nervous system* in tertiarism. Thus, cerebral syphilis occupies the second place among all the tertiary lesions. At the head of the list come the tertiary syphilides with one thousand four hundred and fifty-one cases, and after these comes syphilis of the brain with seven hundred and fifty-eight cases. Therefore, *after the skin, the brain is most frequently attacked by syphilis*—that is to say, the noble organ *par excellence* which governs the whole body. The consequences which result from these lesions of the brain include motor paralysis (especially hemiplegia), intellectual decay in divers forms, and often death.

To the cerebral lesions of syphilis, properly so called, we must add those of the *spinal cord* and the *cranial and spinal nerves*. The total then becomes prodigious, and reaches a higher figure than that of the cutaneous syphilides, which are commonly regarded as the usual manifestations of tertiarism. This total is no less than one thousand eight hundred and fifty-seven, while that of the tertiary syphilides is one thousand four hundred and fifty-one.

Therefore, from these statistics, which are based on an assemblage of facts taken at hazard from cases in private practice, it results that *the nervous system is the chief victim of tertiarism*. It is this which, of all the organic systems, is the most often affected by tertiary syphilis, and with a frequency which I was far from suspecting myself before compiling these observations.

Moreover, this fact is not accepted by syphilographers only, but is beginning to be generally acknowledged by the medical profession. Professor Landouzy remarked to me some years ago that "it is incredible how often one meets with nervous affections caused by syphilis, especially lesions of cerebral syphilis, both in hospital practice and in private." Professor Raymond also considers that "syphilis is the most common cause of diseases of the nervous system." Personally, I long

ago expressed the opinion that "the principle of syphilis, whatever it may be, whether virus, microbe, or microbic secretion, if it constitutes a poison for the whole economy, especially constitutes a poison for the nervous system." When we consider the importance of the functions performed by this system, we can judge of the gravity which this fact adds to the prognosis of tertiarism.

The proof of this, as regards cerebral syphilis, is furnished by the following statistics, relative to seven hundred and forty-three cases of cerebral syphilis, which I have observed in private practice during the last thirty-nine years. Excluding from this number three hundred and eighty-nine cases, the termination of which I could not obtain, there remain three hundred and fifty four cases, the termination of which is known. The following are the results: seventy-nine patients were cured, sixty-six patients died, two hundred and nine patients survived with divers infirmities, often severe, and all incurable. The details of these cases are shown in the following table:

	Cases
Exclusively motor disorders	61
Exclusively intellectual disorders	44
Both motor and intellectual disorders	73
Epileptic attacks	25
Divers disorders, including vertigo, deafness, blindness, incontinence of urine, impotence, etc	6
	209

Reducing these figures to percentages, we find that out of one hundred cases of cerebral syphilis, twenty-two are cured, nineteen are fatal, and fifty-nine survive with permanent infirmities, many of which, such as paralysis and mental decay, are almost equivalent to death. On the whole, therefore, in one hundred cases twenty-two are favorable, and seventy-eight unfavorable.

In order that my meaning may not be misunderstood, I do not intend to say that out of one hundred cases in which syphilis attacks the brain there are twenty-two cured and seventy-

eight not cured. What I say is that this is the approximate proportion *under the conditions in which cerebral syphilis usually presents itself,* either in private or hospital practice. Most often, patients affected with cerebral syphilis come to us at a comparatively late period, when the lesions are already well established, and consequently less amenable to treatment. Hence the frequent failure in the treatment of cerebral syphilis. But if the disease is attacked early, it is curable in the majority of cases.

2. But this is not all, for the prognosis of tertiarism is rendered still more gloomy by the group of affections called *parasyphilitic.* It is generally recognized that certain affections which are frequently observed in syphilitic subjects are the consequences of syphilis, without being syphilitic except in origin. These are syphilitic in origin, but not syphilitic in nature. To these affections I have given the name of *parasyphilitic.*

The addition of parasyphilis to syphilis considerably increases the gravity of its prognosis. Syphilis is certainly grave enough by itself, but it has become much graver by the annexation of parasyphilis, and this for three reasons which it is necessary to specify:

(1) *The Frequency of Parasyphilitic Affections.*—The most frequent of all is *tabes,* which is quite common in syphilitic subjects. In the preceding statistics it comes in the third place, among the tertiary lesions, with the considerable figure of six hundred and thirty-one cases out of four thousand four hundred patients.

(2) *The Gravity of Most of the Parasyphilitic Affections.*—It is sufficient to mention that these affections include neurasthenia, buccal leucoplasia, general paralysis, and tabes, in order to show their gravity.

(3) *Failure of Specific Treatment in Parasyphilitic Affections.*—These affections are very little influenced by mercury and iodide. Against syphilis proper we are well armed, but against parasyphilis we are less so. For instance, we have a chance of curing spinal syphilis, but not of curing tabes or general paralysis in the same way.

I emphasize this point advisedly, for it does not appear to me to be sufficiently appreciated that the addition of parasyphilis to syphilis has burdened the latter with new responsibilities. It has positively more than doubled the gravity of the prognosis, and has rendered it incomparably worse than formerly, so that syphilis, as it must now be understood, is very different from the point of view of prognosis to the syphilis of fifty years ago. Nowadays, we are obliged to recognize two possible results which were not known to our fathers—*general paralysis and tabes.*

Dangers concerning the Family

The social danger of syphilis relative to the family includes the three following points:

1. Contamination of the wife.
2. Dissolution of marriage.
3. Ruin of the family by incapacity of its head.

1. The first danger introduced into marriage by the syphilis of the husband is naturally contamination of the wife. From this there are two consequences:

(1) The wife is exposed on her own account to all the risks of syphilis.

(2) The future children of the infected couple are exposed to the worst form of hereditary syphilis—*mixed heredity,* which is far more harmful than exclusive heredity from one of the parents. It is known by experience that, of the three forms of heredity which threaten the fœtus—paternal, maternal, and mixed heredity—it is the last which is the most injurious and the most fatal.[1]

It is a matter of common occurrence for a married and virtuous woman to be infected with syphilis by her husband. This may occur in three ways: (1) By antenuptial syphilis in the husband, which is the most common; (2) by postnuptial syphilis; (3) from a fœtus infected by the father.

[1] This point is demonstrated in my book on "L'Hérédité Syphilitique," 1891, p. 89.

I can not only affirm this fact by observation in practice, but I can state the numerical frequency by a prolonged inquiry which I made on this subject.[1] The results of this inquiry showed that out of one hundred syphilitic women infected sexually, eighty-one were immoral women of all kinds, and nineteen were married women whose husbands were found by myself to be syphilitic.

At different times since these statistics were made I have renewed the inquiry, and always with almost identical results—seventeen to twenty-three per cent.—so that I think the figure of twenty per cent. would be near the truth.

What an answer to those optimists who are strangers to our art, and strangers to the reality of things, who represent syphilis among women as the monopoly of the demi-monde, and as derived exclusively from debauch! And what an answer to the adversaries of all public prevention, who tell us that our attempts at the prophylaxis of syphilis only encourage debauch by offering it safety! To them we can reply that any prevention of syphilis may at least have the beneficial object of protecting a certain number of individuals who are worthy of all respect, since out of a hundred women who contract syphilis there are twenty who receive it from their husbands.

2. The second point is the *frequent disunion of the family as the consequence of syphilis.* The evil reputation of syphilis is enough to inspire a woman with feelings of disgust and indignation against the husband who inflicts her with such pollution. In the eyes of a virtuous woman, syphilis is a shameful disease—a stigma of debauch or infamy, a disease of loose women. For this reason, syphilis, when introduced into the conjugal hearth, is an element of estrangement or even of separation.

As a matter of fact, affairs are generally arranged under such circumstances, for various reasons—either the wife does not comprehend, or feigns not to comprehend. But this is not always the case, especially when the wife's family come upon the scene. Then, if the wife is inclined to pardon the offense when she alone is concerned, it is often otherwise when there

[1] *Vide* p. 347.

are children. For example, one of my patients, who had already had three miscarriages, gave birth to a syphilitic child, which soon died. The disease was a revelation to her, and she remarked to me that she would never pardon her husband for the loss of the four children; and when, some time later, I proposed treatment for her for the benefit of her future children, she indignantly replied that she would never have any more children by a man who had already killed four!

When such seeds of resentment are sown in a family it is easy to conceive what may be the consequences—namely, rupture of the conjugal bond, with all its social miseries, such as actual separation of husband and wife while simulating the appearances of married life, adultery of the husband or wife, actual separation by arrangement or judicial separation; finally, divorce.

Divorce on the grounds of syphilis transmitted from husband to wife is far from uncommon nowadays, especially in Parisian society. I have myself known of a dozen cases among my patients, and I learn from M. Feuilloley that during the year when he presided at the divorce court there were eight or ten cases of divorce for this special reason.

3. A third danger which is often introduced into the conjugal hearth is *ruin of the family,* owing to the incapacity or death of its head. This is only a natural consequence of the evolution of the disease. We know that the dates of appearance of tertiarism are often delayed for a considerable time. Thus, out of a total of five thousand seven hundred and sixty-seven tertiary lesions, I found two thousand eight hundred and fourteen which did not appear till after the tenth year. Hence, out of one hundred tertiary lesions, fifty-one occur before the tenth year, and forty-nine afterwards.

Therefore, it often happens that a man of mature age expiates the sins of his youth after he has married. In other words, the married man pays the debt of the bachelor, and this debt may be a heavy one—a lesion which affects an important organ, or even one which threatens life. This lesion may consist in cerebral or spinal syphilis, tabes or general paralysis, or deep ophthalmia. Such a lesion may cause severe or permanent

disablement, blindness, or mental decay, and consequent distress of the family through the incapacity of its head.

Hereditary Consequences

The hereditary consequences, and especially the high infantile mortality due to syphilis, constitute its chief social danger.

No doubt these hereditary consequences are not inevitable, for if it were so syphilis would be the most active of all factors in depopulation. The hereditary influence of syphilis may be counteracted or even annihilated by specific treatment. Moreover, it is common to meet with syphilitic subjects who have procreated healthy children. But, when insufficiently treated, or abandoned to its own evolution, syphilis is particularly detrimental to the young, and is often fatal.

It is most often fatal during the first months of pregnancy, causing syphilitic abortion. It is also frequently fatal during the later months of pregnancy, causing premature birth. It is fatal, again, soon after birth, or during the first few weeks of life. The official statistics show that from 1880 to 1885 there were four hundred and fifty-eight deaths out of nine hundred and ninety-five births issued from syphilitic women—a mortality of forty per cent.

After remaining latent for several years or even till adolescence, syphilis may cause death by some lesion of what is called *late hereditary syphilis*. This is much more common than is generally believed, because it is generally unrecognized.

Another essential point to be noted is that this fatal effect of syphilis often continues through a series of pregnancies, and it is common to meet with families where several miscarriages have occurred owing to syphilis. For example, one of my patients at the St. Louis Hospital, a well-developed woman, but syphilitic, and married to a syphilitic husband, had twelve miscarriages without any appreciable cause apart from the disease. Later on she had four children, of whom three died of meningitis, and the fourth, a rickety and wizened child, died also. It is also common to meet with families in which, without mentioning abortions, several infants born at term have succumbed at an early age of undoubted syphilis. There are

thousands of cases in which syphilis has killed two, three, four, or five children in the same family, and many cases have been reported in which the number has reached a higher figure.

Case of	Births	Deaths	Case of	Births	Deaths
Behrend	11	8	Le Pileur	11	10
Turkman	11	8	Bryant	12	11
Comby	11	8	Carré	12	11
Moncorvo	9	8	Fournier	16	11
Fournier	9	8	Nobl	15	12
Pinard	11	9	Davis	19	15
Christian	10	9	Fournier	16	15
Apert	10	9	Ribemont Dessaignes	19	18
Fuchs	14	10			

In some cases syphilis ends in annihilating the posterity of certain families, as is shown by the following examples:

Case of	Births	Deaths	Case of	Births	Deaths
Bertin	4	4	Fournier	5	5
Cazenove	4	4	Tanner	6	6
Arteaga	4	4	Trousseau	6	6
Orlowski	4	4	Tardiff	6	6
Legrand	4	4	Molenes	6	6
Hutinel	4	4	Fournier	6	6
Lemonnier	4	4	Fournier	6	6
Perrin	4	4	Hudelo	7	7
Fournier	4	4	Fournier	7	7
Fournier	4	4	Fournier	7	7
Fournier	4	4	Erasmus Wilson	8	8
Pinard	5	5	Christian	8	8
Hermet	5	5	Bar	10	10
Krykus	5	5	Porak	11	11
Fournier	5	5			

All this has become common knowledge, since the numerous observations which have been published have confirmed these results, so that *infantile polymortality* has become a sign which is constantly looked for in the diagnosis of heredo-syphilis. Not that syphilis is the only cause of infantile mortality, for it is known that tuberculosis, alcoholism, saturnism, etc., have a similar influence, but such is the frequency of the fatal action of syphilis on the young that infantile polymortality should always raise the suspicion of syphilitic heredity, a suspicion which is most often confirmed by other signs.

I may add that the hereditary influence of syphilis varies

according to the age of the disease, and according to its parental origin, etc. Thus it is shown by statistics that *paternal* heredity has the lowest mortality—twenty-eight per cent.—while that of *maternal* heredity is sixty per cent.; lastly, mixed heredity is the most fatal of all, with the figure of sixty-eight per cent.

The hereditary influence of syphilis also varies according to social status. In private practice the mortality of infants born of syphilitic mothers is about sixty per cent., while in hospital practice it rises to eighty-four or eighty-six per cent.

Lastly, experience shows that this influence is very unequal according to the age of the syphilis. It attains its maximum in the first three years of the disease, and diminishes afterwards. The effect of time is to attenuate and finally annihilate the heredo-syphilitic influence.[1]

Although I am only dealing with these points in a summary manner, there is one to which I must draw particular attention—this is, the extraordinary malignancy of the heredo-syphilitic influence in the early stages of the disease.

I have seen ninety women, infected by their husbands, become pregnant during the first year of their disease. The results of these ninety pregnancies were as follows: fifty abortions or still-births, thirty-eight infants who died soon after birth, and two children who survived—eighty-eight deaths out of ninety.

These cases were not observed in hospital, nor under adverse social conditions, but in private practice in well-to-do or even aristocratic families, and among young women of good constitution enjoying the benefits of hygiene and wealth. This first year of infection, from the point of view of heredity, may well be called the *year of terror*.

Dystrophies and Degenerations of Heredo-syphilis

Another danger of heredo-syphilis results from the curious *dystrophies* which have only lately been studied, and of which a good number constitute, both for the individual and for the species, stigmata of decadence and degeneration.

[1] *Vide* "L'Hérédité Syphilitique," 1891, p. 97.

These hereditary defects do not take the form of syphilis proper, but have the characters of dystrophic manifestations. As Edmond Fournier says, "they nearly all consist, in an infinite variety of forms, of defects in development, ending in imperfections, organic abnormalities, arrested formation, deviations from the normal type, and, in their highest degree actual monstrosities. This results for the individual in diminution of vitality and vital resistance, in inferiority of various degrees compared to individuals who are better adapted for the struggle for life—in fact, a step toward degeneration."[1]

These dystrophies of heredo-syphilitic origin are so numerous that they would require a volume to describe them, and I will confine myself here to a summary account of the most important. They may be naturally divided into three groups:

1. Those which concern the individual in a partial manner, affecting one system or part of a system, or even a single organ.

2. Those affecting the body as a whole and in all its parts.

3. Those which are characterized by excess of the dystrophy, constituting monstrosities.

1. The first group includes the following dystrophic types:

Dental dystrophies, which are extremely common, and maxillary dystrophies, including atrophy of the incisor bone, arching of the palate, cleft-palate, etc.

Cranial malformations, including cranial bosses, natiform skull, asymmetry, microcephalus, and hydrocephalus.

Nasal, ocular, and auricular dystrophies. Spinal dystrophies—scoliosis and spina bifida.

Dystrophies of the limbs, including asymmetry, partial elongation, gigantism, partial dwarfism, general dwarfism, polydactylism, syndactylism, ectrodactylism, ectromelia, hemimelia, pelvic deformities, congenital dislocation of the hip, club-foot, etc.

Cerebral and spinal dystrophies, deaf-mutism. Cardiac and vascular dystrophies—blue disease, congenital aplasia of the vascular system. Genito-urinary dystrophies—ectopia vesicæ, cryptorchidism, testicular infantilism, uterine and ovarian malformations, etc.

[1] Edmond Fournier, "Stigmates Dystrophiques de L'Hérédo-Syphilis," 1898.

2. The second group, constituted by general dystrophies, includes three principal and well-known types:

(1) Original dystrophies of constitution, temperament, and vital resistance, manifested in different forms at different periods of life.

In early infancy this native dystrophy is represented by the well-known type of syphilitic infant—a puny, atrophied, wizened creature, too weak to suck or to cry, presenting the classic type of facies which has been called infantile senility, and generally destined to early death.

Later on it is manifested by the more uncommon type of the *valetudinarian infant*—delicate, weakly, or earthy complexion and feeble muscles, difficult to bring up, always ailing, predisposed to all infections, especially tuberculosis.

Finally, at any age it may be manifested by what I have called *fragility of life*—that is to say, by a quotient of vitality inferior to the normal, and by less resistance to disease. Heredo-syphilitics are often carried off by diseases which are not usually fatal. They often die at an early age of "nothing at all," so to speak, without any definite disease, and in many such cases the most careful autopsy does not reveal the cause of death.[1] At a more advanced age it is not uncommon for the ailments of heredo-syphilitics to assume a particularly serious or even malignant form, and the reason for this gravity can only be attributed to the native debility of these subjects—that is, to their hereditary taint. For example, Jullien recently reported a curious case of fulminant pneumonia in a heredo-syphilitic aged twenty-two years, a puny, dystrophic, hæmophilic subject, who died in thirty-six hours.

(2) A second type of general dystrophy is *infantilism*, constituted principally by a permanent arrest of physical development, and resulting in shortness of stature and slender body and limbs—a kind of stunted condition. I have seen many heredo-syphilitics at their twentieth year suffer the humiliation of rejection for military service for deficient height. I know one family in which, out of six children, born of a syphilitic

[1] "Influence Dystrophique de L'Hérédo-Syphilis" (A Fournier, *Médecine Moderne*, 1890).

father and a healthy mother three were too short for military service, the father and mother being both above the average height.

(3) A third type is the *rachitic*. Rickets is not exclusively derived from syphilis, as Parrot believed, but it is, nevertheless, a common mode of expression of heredo-syphilis. The result of clinical experience has been to cause a reaction against the excessive opposition which was provoked by the doctrine of Parrot. This clinical truth is that, in one way or another, *rickets is closely allied to heredo-syphilis*. Heredo-syphilis is not the only cause of rickets, but it is a very frequent cause, as I can confirm from my own experience. This opinion is also held by Pinard, who told me recently that he had never observed a single case of rickets apart from heredo-syphilis.

3. The last group of heredo-syphilitic dystrophies includes deviations from the normal type which are so considerable as to cause *monstrosity*. Such cases are, no doubt, uncommon, but they are none the less suggestive as an example of the intensity of decadence which heredo-syphilis is capable of inflicting on the embryo. Although this subject is of comparatively recent date, Edmond Fournier has collected twenty-three cases which are incontestable.[1]

It is, therefore, certain that syphilis may create monsters. There is nothing surprising in this, because monstrosity is only an exaggeration of dystrophy, and syphilis is *par excellence* a cause of hereditary dystrophies. The reason why syphilis has only recently been recognized as a cause of monstrosity is that the relationship was not previously thought of. On the whole, therefore, the different dystrophies in question consist of imperfections in development, which are the causes of decadence and degeneration in the individual.

Heredo-syphilis gives rise to *degenerates*, as manifested by the puny infants who die soon after birth, by the valetudinarian weakly children who survive, by the subjects of infantilism and rickets, by mental defects, varying in degree from what are called backward children to imbeciles and idiots; by degeneration of the nervous system, causing hydrocephalus, neuroses,

[1] "Stigmates Dystrophiques de L'Hérédo-Syphilis," p. 131.

hysteria, neurasthenia, epilepsy, and deaf-mutism, etc. Thus, the heredo-syphilitic influence often ends in the production of subjects who are decadent and degenerate in different degrees and in different ways, and it must therefore be regarded as a cause of degeneration of the species.

Dystrophic Heredity of the Third Generation

We have now to consider the question of the *descendants of these dystrophic subjects* (third generation of syphilis). Will these descendants be affected with the heredo-syphilitic influence or not? First of all, in certain cases, there is no possibility of any progeny, owing to sterility caused by dystrophies of the testicles, ovaries, and uterus, and malformation of the genital organs. Dr. Doleris has recently told me of a series of cases of ovarian sclerosis which he has observed in heredo-syphilitic women.

But when they exist, what will be the nature of the descendants? I believe it is most common for them to be normal and free from hereditary taint. But it is, nevertheless, proved that the children of heredo-syphilitics may carry the mark of their original taint. It is proved that syphilis of the grandfather may manifest itself in the grandchildren by some dystrophic stigma, so that *there certainly exists a dystrophic heredity of the third generation.*

Although the subject is still new, we are in a position to affirm this fact owing to a series of researches and observations. Thus, Barthélemy, who has investigated this question for several years, has often seen this syphilitic heredity of the third generation manifest itself by the most varied dystrophies, but always resembling those which characterize syphilitic heredity of the second generation.

The dystrophies observed include congenital debility, retarded growth, arrest of physical development, infantilism, retarded dentition and dental dystrophies, strabismus, rickets and scoliosis; malformations, such as cranial bosses, hydrocephalus, cranial and facial asymmetry, saddle-nose high-arched palate, hare-lip, cryptorchidism, syndactylism, hernia, especially umbilical, nævi; vascular disorders—acrocyanosis; ner-

vous affections, such as hysteria, infantile convulsions, epilepsy, mental debility, and idiocy.

Similar facts have been lately produced by several observers, especially by Tarnowsky, Étienne, Jacquet, Jullien, Gastou, and Edmond Fournier. For my part, I could cite a good number which give evidence in the same direction. Sometimes this hereditary influence of the third generation has been seen to assume an intensity equal to that of the second generation. It has been seen to affect a whole progeny, as is shown by the three following cases:

1. *Gibert's Case.*—Four children born of a healthy father and a heredo-syphilitic mother. All four affected with a high degree of rickets, and one of them an idiot.

2. *Caubet's Case.*—Four pregnancies in a heredo-syphilitic woman with a healthy husband ended in one miscarriage, two still-births, and a monster (double hare-lip, absence of uvula, club-foot, deformed ears and digits, imperforate urethra, articular malformations and nævi, etc.).

3. *Étienne's Case.*—Fourteen pregnancies in a healthy woman with a heredo-syphilitic husband ended in six dead children and abortions, five children with cerebral disorders, one backward child, and two children with dental dystrophies.

These cases resemble in every way those of heredity of the second generation, and the identity of the two classes of accidents bears witness of their common origin.

It must therefore be accepted as a fact of undeniable authenticity that *heredo-syphilis may have the same harmful effect on the fœtus as acquired syphilis.* In the same way as the latter, it constitutes a predisposing cause for abortions, still-births, and infants destined to early death.

For my part, I have observed the following results of thirty-four pregnancies in which one of the parents was a heredo-syphilitic: eleven abortions, three premature births, and four cases of death soon after birth—a mortality of fifty-three per cent. In a case observed by Pinard, a heredo-syphilitic woman with a healthy husband had four miscarriages and a syphilitic infant. In a case related by Tarnowsky, eleven pregnancies in a healthy woman with a heredo-syphilitic husband ended in

eight still-births and three living children, of which one was a hystero-epileptic, another tuberculous, and the third affected with exophthalmic goiter.

By adding the results of the different observations of this kind which I have been able to collect, I have obtained the following figures out of a total of eighty-one pregnancies, in which one of the conjoints was a heredo-syphilitic:

Abortions	28
Still-births	13
Death soon after birth	7
Survivors	33
	81

—that is to say, a mortality of fifty-nine per cent. Consequently, we find in heredo-syphilis an abortive and fœticidal influence which must be added to the list of the evil effects of syphilis.

At what Age is Syphilis contracted?

The following table of statistics has been drawn up by my son, Edmond Fournier, from a total of eleven thousand cases of syphilis in my private practice, including ten thousand men and one thousand women, with a view to determine the relative frequency of syphilitic infection at different ages. These statistics concern cases of sexual contamination exclusively:

Age of Infection (Years)	Men	Women	Age of Infection (Years)	Men	Women
11	1	—	28	497	50
13	1	—	29	388	35
14	5	6	30	371	27
15	16	12	31	256	15
16	38	22	32	237	33
17	119	33	33	183	19
18	277	62	34	187	10
19	367	74	35	151	17
20	610	104	36	115	10
21	698	74	37	131	15
22	810	49	38	97	10
23	829	61	39	103	4
24	789	61	40	93	6
25	773	59	41	74	7
26	628	45	42	69	8
27	545	38	43	48	3

Age of Infection (Years)	Men	Women	Age of Infection (Years)	Men	Women
44	51	12	59	7	—
45	59	2	60	16	—
46	42	3	61	8	—
47	35	1	62	7	—
48	36	2	63	1	—
49	28	4	64	6	—
50	38	—	65	7	—
51	23	3	66	2	—
52	21	2	67	2	—
53	23	—	68	1	—
54	25	2	69	4	—
55	21	—	70	1	—
56	11	—	71	1	—
57	7	—	80	1	—
58	13	—			

These statistics show that syphilis is contracted most frequently between the twentieth and twenty-sixth year in men, and in women between the eighteenth and twenty-first year, and that the maximum is attained in men at the twenty-third year and in women at the twentieth year.

There is no senile syphilis in women, for two reasons: First, because they cease to be attractive; secondly, because sexual desire disappears earlier.

Among prostitutes it appears that the maximum of frequency of syphilitic contamination occurs at an earlier age. Thus, Edmond Fournier finds from statistics obtained from the Lourcine and St. Lazare hospitals that the maximum occurs at the eighteenth year.

These statistics are instructive, since they show that syphilis is most frequently contracted during the first years of youth—that is, *during the years of inexperience.*

But this is not all, for if we examine the statistics further, we obtain the following results, showing the number of contaminations which occur before the twentieth year:

(1) In men, out of a total of 10,000 cases:

Contamination in the 19th year	367	cases.
" " 18th "	277	"
" " 17th "	119	"
" " 16th "	38	"
" " 15th "	16	"
Total	817	"

(2) In women, out of a total of 1,000 cases:

Contamination in the 14th year	6	cases.
" " 15th "	12	"
" " 16th "	22	"
" " 17th "	33	"
" " 18th "	62	"
" " 19th "	74	"
Total	209	"

Reducing these figures to percentages, we find that out of one hundred men who contract syphilis, eight are infected before the age of twenty; and out of one hundred women who contract syphilis, twenty are infected before the twentieth year.

These facts still further strengthen the argument in favor of the prophylaxis of syphilis, for subjects of such youthful age cannot be expected to be warned against contamination by reason and experience. Would it not be more charitable to take steps to protect those who are incapable of protecting themselves?

It has been objected that such protection would not benefit those who are worthy of it, but only those who frequent the brothels and consort with prostitutes.

This is a grave error, for all cases of syphilis are etiologically answerable; they are all connected by a veritable network of communications and exchanges. It is an axiom in prophylaxis that contagion is conveyed by *ricochets,* which cross each other from one social level to another. It is quite common for syphilis to rebound from the most miserable hovel to the richest or purest household. I happen to have before me two such convincing examples that I cannot refrain from citing them.

A gentleman of the highest social position contracted syphilis from a superb courtesan, an actress in her spare moments, who contracted it from a hairdresser, who was only a hairdresser in his spare time, but in reality practiced the most unmentionable profession.

One of my patients, a respectable married man, after a dinner with some college friends, visited a brothel in Paris "out

of curiosity." Having several glasses of champagne too much in his head, he allowed himself to be led astray, and contracted syphilis, which he soon communicated to his wife, who transmitted it to her child whom she was suckling.

It is thus that syphilis often passes from the garret to the palace, from the lowest brothel to the virtuous woman's boudoir, and even to the child's cradle. Therefore, there is no hearth which can be indifferent to the prevention of syphilis. *To cleanse the brothel is not only to protect those who frequent it; it is also to protect the family hearth, the honest woman, the child, and the race.*

In conclusion, I repeat that syphilis is a social scourge, by reason of its many dangers, which threaten the individual, the family, the children, and even the grandchildren. It is no exaggeration to say that it is an active factor in depopulation, and thereby injures the interests of the country. It penetrates into all grades of society, even the most virtuous classes, whom one would suppose would never be affected by it. Together with alcohol and tuberculosis, it forms "the three plagues of the present day."

Now that two crusades have been organized against alcoholism and tuberculosis, it is high time that a league of the same kind should be instituted against syphilis. Society has the right to arm itself against such an enemy, and to combat it with all the means at its disposal. I will emphasize the last point by the following propositions:

1. Society finds, in the multiplicity and high gravity of the dangers by which it is threatened by syphilis, the legitimate right to defend itself against syphilis by measures of public prevention.

2. An incontestable, but constantly unrecognized, consideration is that syphilis is a danger, not only to those who expose themselves to it, but also to an infinite number who do not expose themselves to it—for instance, the infection of a wife and children by a syphilitic husband.

3. With regard to those who expose themselves to syphilis of their own accord, it is to the general interest to protect them, even when they can protect themselves, because it is from these

that syphilis is derived which affects those who do not expose themselves to it.

Society has therefore the right to intervene by measures of public prophylaxis to render sanitary the centers of debauch and contagion.

4. Lastly, with regard to those who are threatened by syphilis, although not exposing themselves to it, society should protect them because they are incapable of protecting themselves.

I maintain that it is the duty of society to defend against syphilis the sacred interests of the honest woman, the family, the child, and even the unborn infant.

CHAPTER XXXIX

THE LEAGUE AGAINST SYPHILIS

(The French Society for Sanitary and Moral Prophylaxis)

It will certainly be a distinctive mark for our time to have undertaken what had previously not been attempted—to resolutely attack two of the great plagues which decimate humanity. I refer to the leagues which have been founded during recent years against alcoholism and tuberculosis.

But these are not the only plagues which devastate modern society. There is a third which is no less pernicious, and that is *syphilis,* or, to speak more correctly, syphilis and gonorrhœa, the true prognosis of which has only been revealed by the work of the present day, and the gravity of which has only recently been properly understood.

A day must come when an effort of the same kind will be attempted against this third modern plague, syphilis—a day when it will be finally decided to take arms against it, to emerge from a state of passive resignation and say, "Enough of this! It behooves us to defend ourselves better than we have done hitherto against a terrible enemy which makes so many victims among us, in all classes of society, and at all periods of life. We know by bitter experience that the old methods which were reputed to protect us are impotent or insufficient in this respect, since the 'French disease' of the Middle Ages is still with us after more than four centuries, and has resisted all the attempts made against it by preceding generations. Let us try some other measures, and, instead of trusting to the initiative of our governing bodies, let us appeal to private enterprise, and form a *league.* Let us study and discuss among ourselves the important questions of prophylaxis, and make war ourselves against the plague."

But this day is come, for a hundred men belonging, not only to the medical profession but to scientific, literary, administrative, and artistic circles, have formed a society, which, under the name of the Society for Sanitary and Moral Prophylaxis, is a veritable *league against syphilis.*

I will now say a few words concerning the object which this new society has in view, and concerning the programme which it hopes to realize in a practical form.

First of all, what is the object of this league, and what are the motives which have induced us to constitute it? The motives are numerous, but there are three of major importance:

1. The considerable frequency of syphilis in modern society, and in all classes, from the lowest to the highest.

2. The dangers of syphilis—dangers which every day appear more numerous and more grave with the advance of knowledge, so as to raise this disease to the rank of a veritable social calamity.

3. The obvious importance, or, at any rate, insufficiency, of the preventive measures actually in force in arresting this plague; and the inability and lethargy of the public authorities who are supposed to protect us.

The Frequency of Syphilis.—As regards the frequency of syphilis, I cannot state definitely whether the disease has increased among us numerically. I believe that it is on the increase, and that it has more victims to-day than thirty or forty years ago, and a number of my colleagues are of the same opinion. But it is impossible for any one to prove this point by convincing statistics, as there are no figures to form the basis of a comparison.

In any case, the considerable frequency of syphilis among us is incontestable. Dr. Le Noir, who has studied this question for nine years, reported at the International Congress at Brussels that in the adult male population of Paris the proportion of syphilitic subjects was not less than thirteen per cent., and probably nearer fifteen per cent. Therefore, in Paris there are one hundred and twenty-five thousand syphilitics of the male sex alone. I have myself studied the same question in the more special hospitals of Paris, and arrived at closely analogous

results (eleven, twelve, thirteen, seventeen, and eighteen per cent.). I think thirteen is the figure which is nearest the mark. As regards *gonorrhœa,* there are few men who escape it, and most are infected several times.

The Dangers of Syphilis.—Syphilis has always been regarded as a grave disease, but how much more grave does it appear nowadays, when the result of the scientific work produced during the last thirty or forty years has been to attach to it such a number of manifestations of which formerly no one thought it culpable! Without exaggeration, we may say that there is no disease the domain of which has been increased by such a series of annexations. Compare the table of contents of a treatise on syphilis of 1850 (such as those of Melchior Robert or Vidal de Cassis, which were the two classics in my student days) with a treatise of the present day; what a difference between the two works! Such a number of chapters occur in the modern works which are absent in the old treatises that one would hardly believe they dealt with the same disease.

Cerebral syphilis, spinal syphilis, syphilis of the fundus oculi, laryngeal syphilis, pulmonary syphilis, cardiac syphilis, arterial syphilis, hepatic syphilis, renal syphilis, gastro-intestinal and rectal syphilis—all these subjects, which are scarcely mentioned in the treatises of 1850, form the greater part of the modern books. It is hardly necessary to say that with each of these annexations the prognosis of syphilis has become graver. Then there is the terrible mortality caused by *syphilitic heredity,* and twenty-five years ago no one thought of *late* hereditary syphilis.

But this is not all, for to the prognosis of syphilis proper has recently been added that of *parasyphilis.* It is now generally accepted that certain affections which frequently occur in syphilitic subjects are the consequences of syphilis, without being syphilitic except in origin, and to these has been given the name *parasyphilitic.* These parasyphilitic affections add a further burden to the prognosis of syphilis, on account of their special gravity, their frequency, and by the comparative failure of anti-syphilitic treatment.

The three principal types of parasyphilis are tabes, general

paralysis, and buccal leucoplasia, with its common sequence, cancer of the tongue—all incurable affections with an inexorable prognosis. So that the annexation of parasyphilis to syphilis has burdened the latter with new responsibilities, and we may say without exaggeration that *syphilis is nowadays ten times graver than it was for our predecessors.*

This is rendered evident by two considerations:

1. Thirty or forty years ago it was believed that a few months were sufficient for the treatment of syphilis—six months of mercury followed by three months of iodide—but nowadays we are only satisfied with treatment extending over several years.

2. Thirty or forty years ago a syphilitic was allowed to marry after nine to fifteen months' treatment with mercury and iodide, especially because secondary lesions were not then considered to be contagious. To-day we only permit marriage after several years' treatment.

When, in 1880, in the first edition of my book on "Syphilis and Marriage," I stated that a syphilitic should undergo at least three years' treatment before dreaming of marriage, I was told that this was excessive and unnecessary. But what do I see to-day? A number of my colleagues have become even more exacting, and only allow marriage after four, five, or six years' treatment!

This shows that with increasing knowledge the prognosis of syphilis has become more and more serious, and that patients require more prolonged treatment before becoming admissible to marriage.

The same with gonorrhœa, the gravity of which, especially with regard to women, was for a long time unrecognized, and has only been demonstrated by recent research.

THE INSUFFICIENCY OF THE PRESENT MEASURES FOR PROPHYLAXIS.—After the many disappointments we have experienced, it would be an error to wait longer for the public authorities to take the intiative in the matter of reform in the present measures of prophylaxis.

The public authorities appear to be—I will not say indifferent to the questions which concern us—but strangers to the

anxiety which these questions awaken in us, and to the deplorable spectacle which we witness as medical men. The proof of this is found in the following facts:

In 1887 the Academy of Medicine appointed a Commission for the purpose of presenting a report on what could be done to diminish the frequency of syphilis and venereal diseases. The Commission, after long and laborious investigation, prepared this report. The Academy discussed the question for several months, and concluded by unanimous agreement to the resolutions concerning the public prophylaxis of syphilis. This scheme was conveyed to the ministerial authorities. But what has become of this scheme? For *thirteen years* it has lain among the ministerial documents in a peaceful slumber, which no one has cared to interrupt, and which will probably be the sleep of eternity!

In the same way, the International Conference at Brussels, "being of opinion that a profound knowledge of venereology constitutes one of the best means for efficiently attacking the propagation of venereal diseases," requested from the public authorities certain reforms in the teaching of this subject—the opening of new departments, the creation of new chairs in all the medical schools, special examinations, obligatory attendance for several months in the special hospitals, etc. What was the response to this modest request, which, without harming any one, would have benefited everybody? Nothing.

I might mention a number of commissions which either at the Municipal Council of Paris or elsewhere, have elaborated schemes on the same questions. What has become of all these schemes? Always nothing.

In Parliament they are little inclined to discuss and legislate on all the subjects which interest us in this question. I have often had the proof of this in discussing these questions with senators, especially the law of police supervision, the reform of which was urged by the Academy in 1887. "No doubt you are right," they almost invariably reply. "You have the best arguments in the world, which we do not contradict; but these things do not concern us: they belong to the municipal administrations and the police. Therefore apply to the police to

regulate your sanitary prophylaxis. The police have regulations for the purpose, and it is they who can give you the most satisfaction."

The French Society for Sanitary and Moral Prophylaxis

For the above reasons, since we cannot depend on the authorities, we must depend on ourselves, and appeal to private enterprise. We must discuss between ourselves the reforms which will benefit our cause, which is that of the public interest. It is evident that public opinion is not yet decided on the question, but it is for us to make it so by creating an agitation on these special questions, by constituting for them a center of study and propaganda. It is also evident that Parliament is not with us at present, but it will come to us when it is better informed on the dangers of syphilis and the benefits which may be attained by a public prophylaxis wisely organized.

In short, it is for the safeguarding of our fellow-citizens, and still more for the protection of women, families, and children, that we have founded the *Society for Sanitary and Moral Prophylaxis.*

The aims and ambitions of this society are as follows:

1. To obtain a large number of members, composed not only of medical men, but of hygienists, lawyers, administrators, sociologists, philosophers, literary men, and all who have justice, progress, and charity at heart, so as to profit by all kinds of experience in examining from every point of view the grave and complex questions which it is proposed to study.

2. To present to the public solutions of these questions which have been well investigated and matured, especially as regards their practical application.

3. To gain a moral power by which we may act, even if failing to influence the public authorities and administrators.

4. To initiate the public into the dangers of syphilis and the numerous and divers ways in which it is disseminated, especially the *non-venereal* modes of contagion which are not generally understood.

5. Lastly, if sufficient financial support is obtained, to emerge from the theoretical phase and enter into practical realizations. To found medical dispensaries in accordance with the data of prophylaxis, to carry out measures for the protection of young girls and for the rescue of the fallen, etc. In fact, to carry out on a small scale what ought to be done on a large scale, to combat syphilis and its great purveyor—prostitution.

No doubt this is great ambition on our part, but it is an ambition to which it is not hopeless to aspire if the public will only become interested in our work and second our efforts. In any case, even if restricted to the most modest intentions, our Society is none the less in face of a great labor encumbered with numerous difficulties. But it is impossible that a collective effort such as ours should not ultimately attain some useful and charitable results.

The four following questions have already been proposed for discussion by the Society:

1. In academic centers, should students of the upper classes be instructed in the dangers of venereal diseases, and if so, to what extent and in what manner?

2. In the army and navy, should soldiers and sailors be instructed in the dangers of venereal diseases, and if so, what measures should be taken in this direction?

3. Should young people of the working classes be instructed in the dangers of venereal affections, and if so, to what extent and by what means?

4. Should the transmission of syphilis and venereal diseases be made a penal offense?

I am happy to say that our attempt has succeeded, and our meetings have been followed with interest. At the end of 1902 our Society numbered more than six hundred members.

The Different Preventive Measures

When we study the numerous measures which may concur in the prevention of syphilis, we find that they can be divided into three main groups: (1) Moral and religious; (2) adminis-

trative; (3) medical, constituting what I have called prevention by treatment. A few words on each of these three groups.

Moral and Religious Measures.—I place these at the head of the three groups because they are the simplest and the most natural. They might even be called primordial, in the sense that they could dispense with all the others. It is true that mercury and the internment of prostitutes are not the only means of combating syphilis: morality and religion have also a word to say in the matter. No doubt nothing could be nobler than the extinction of syphilis by the purification of morals and by early marriages, and nothing could be more radical—at least, theoretically—for it is quite certain that if it led to a return of humanity toward innocence and the golden age, the days of syphilis would be numbered.

But—and there is a large "but" in the question—I hardly see that, in the iron age at which we have arrived, in the somewhat gangrenous society in which we live, there is much attention paid to morality, especially with regard to the special subject which interests us. I hear little preaching of continence, chastity, virtue, respect for women, early marriage, etc. Our literature and our theater thrive chiefly on other subjects, where adultery shares the place of honor with the exploits of the *vieux marcheur*. In our schools and colleges there is much more instruction than education. There still remain among the middle classes a few family circles in which the mother, by her example and guidance, supervises the moral education of the child. But among the people, where the hard struggle for daily bread keeps away the father and mother from the household, what becomes of the moral education of the child, and still more of the young man?

Therefore, we medical men, who receive the confidences of human weakness, may well believe that if syphilis is only destined to disappear by the kind of measures in question, it has still before it a long period of prosperity, and that if we are to wait for its extinction, it will be imprudent to trust the safety of our fellow-citizens to the exclusive influence of a preventive method of this kind, the efficacious results of which threaten to be singularly delayed.

However, it is far from my intention to disregard the services which may be contributed to the common object by moral and religious education, and I should be happy to see the priest and the pastor join the ranks of our League. Their advent among us would only do us honor, and would be especially useful in the foundation of certain charitable work.

Administrative and Police Measures.—How many things have been said and written for and against administrative intervention! The utility of this intervention has been shown by a series of reasons which it is superfluous to repeat, and I shall simply mention the two following examples:

1. The great frequency of venereal disease among *clandestine prostitutes* who are not registered. According to different statistics, this proportion has been found to be from twenty-five to forty-eight per cent. In other words, out of one hundred unregistered women arrested for solicitation in public, more than a third have been found diseased. In the single year 1897, in Paris, arrests of the unregistered furnished a contingent of eight hundred and seventy-three patients (Le Pileur). Is it a small service to the population of Paris to rid the streets of eight hundred and seventy-three women who aspired to nothing less than the contamination of the greatest possible number of their fellow-citizens?

To say that regulation only gives illusory protection is nothing else than insane. Again, the interference of the police has been denounced as constituting an abuse of power, and even a violation of individual liberty. I confess that the liberty to give syphilis to the passers-by on the public thoroughfares seems to me to be as little rational as giving liberty to a mad dog.

Therefore, I maintain not only that society has the right to defend itself against the diseased prostitute who distributes syphilis to all comers, but that it is under the obligation to do so in the interests of public safety.

2. The second consideration appears to me decisive. This is that syphilis not only attacks those who run the risk of contracting it, but also *attacks many persons who do not expose themselves to it.* The favorite argument of the anti-regulation-

ists, that regulation only benefits those who could better protect themselves, does not apply in this case, which concerns the married women who are infected by their husbands, and the children who receive the disease from their parents.

I maintain that society has no right to disregard these innocent victims of the plague. I will add that society has no right to disregard that which concerns the interest of the *nation.* Is it necessary to repeat that syphilis kills infants by hecatombs (forty-eight per cent. in private practice, eighty-four and eighty-six per cent. at the St. Louis and Lourcine hospitals)? Is not this a great loss to the population? It appears to me that we have no right to hold human lives so cheap, especially when our population is decreasing, while that of other nations increases.

I therefore conclude that regulation is necessary in the public interest.

But if administrative prophylaxis is rendered legitimate by the public interest, public opinion requires that it should be rendered legal and humanitarian—*legal,* by the substitution of law for the discretionary power of the administration; *humanitarian,* by the substitution of the hospital for the prison for infected women whose internment is necessary for the public health.

For instance, public opinion revolts at the idea that a woman, however low she may have fallen, should be debarred from legal rights, and submitted to registration by any other power than judicial authority. Again, public opinion revolts at the idea that an infected woman, who has no other fault than her disease, should be confined in a prison, and submitted to the discipline and vexations of a penitentiary, under the same roof as thieves and criminals, as occurs in Paris. Certainly let us have internment, but under the form of hospitalization pure and simple—hospitalization which is tolerant, enlightened, and, above all, charitable.

These are some of the reforms which are claimed by our League, but there are others which are no less necessary, such as the closing of the wine shops with a back-room reserved for prostitution, which spread at the same time syphilis and alco-

holism. At the Brussels Conference, in 1899, the motion was carried unanimously "that governments should use all their power to suppress prostitution among girls under age."

Is it not terrible to see prostitution practiced at the age of innocence—at eighteen, sixteen, or even fourteen years of age? But is it not still more lamentable that this prostitution should be tolerated by the public authorities, and sometimes admitted into the ranks of the regulated prostitution? At this tender age, is the moral gangrene beyond all remedy? Is return to another life forbidden to these young prostitutes? Is it not the duty of society to make an effort to prevent these young girls, almost children, from falling into the mire of corruption and vice? Cannot private initiative and charity create asylums of refuge for these poor girls, which should be at the same time houses of moral reform and professional schools? From personal experience, I believe that the greatest service which can be rendered to a young prostitute is to teach her a trade. I have often heard patients say: "If I had been taught to earn three francs a day, I should never have gone on the streets."

To suppress prostitution is good, but to prevent it would be still better. No doubt the sociologists, moralists, and philosophers who enter our League will discuss before us the great social questions of the origin of prostitution and the means of restraining it—for example, the question of female pauperism; the question of woman's wages; reforms in the education of young girls, who, by false modesty, or rather prudery, are left ignorant of the dangers which threaten them, and consequently remain unarmed against these dangers; search for paternity, which would no doubt diminish the number of seductions followed by desertion; responsibility for the damage done to others by venereal contamination, etc.

There is no doubt that one of the aspirations of our League should be to attack prostitution by works of charity, by works of prevention and rescue. In this matter I regret to say that other nations are in advance of us. Not that there is an absence in our country of the works in question, which are especially due to certain noble women, but there are many more abroad of different kinds—for example, professional schools for

women, agencies for obtaining situations for young women, homes for servants out of work, rescue homes, refuges, night shelters, etc. It is time for us to take part in this work of charity.

Measures of Medical Prophylaxis.—I need not say that medical prophylaxis constitutes an active and powerful safeguard against syphilis and venereal diseases, for this is obvious; but I wish to point out that, in the present state of affairs, it constitutes the principal safeguard. In fact, to treat syphilis is not only to cure patients; it is also to drain the sources of syphilitic contagion.

But is our medical organization constituted as it should be with regard to prophylaxis? Certainly not; and I can easily prove it. It is one thing to treat a symptom of syphilis, and quite another thing to treat syphilis. For the cure of a syphilitic lesion treatment of a few weeks or months is sufficient, and our hospitals are excellent for this purpose; while to cure syphilis several years' treatment is necessary. But is hospitalization for several years a thing which can be realized? It is impossible. It is therefore not by hospitals, as I have many times repeated, that we can cure syphilis.[1]

In conclusion, I desire to emphasize these two points:

1. That our present measures of prevention against syphilis and venereal disease are incomplete, superannuated, and insufficient.

2. That by endeavoring to amend, complete, and moralize these measures from the scientific, legal, and humanitarian points of view, a work such as that of the Society for Sanitary and Moral Prophylaxis will be, no doubt, capable of realizing some useful and charitable progress.

We do not expect to force conviction at the first attempt on a number of questions we have at heart. We also realize that on some of these questions we shall meet with opposition, with obstacles of different kinds, and probably suffer disappointments and reverses. But we shall persevere in the knowledge that we are engaged in a good work, and that others will persevere after us.

[1] *Vide* Chapter XXXVII.

CHAPTER XL

THE STERILIZATION OF SYPHILIS

To STERILIZE is to render unproductive. To sterilize syphilis is to prevent it giving rise to other syphilis. Any means which will result in preventing syphilis from becoming the origin of other causes of syphilis is an hygienic and humanitarian enterprise worthy of all efforts, and it is with a view of adding my contingent to this work, and of calling the attention of my colleagues to it, that I say a few words on this subject.

STERILE SYPHILIS AND FECUND SYPHILIS.—There are found in practice cases of syphilis which are *sterile* and cases which are *fecund*. I will explain.

Suppose an intelligent and honest man contracts syphilis. Being intelligent, he will undergo treatment, and being honest, he will abstain from all connection while in a contagious state; moreover, he will wait before marrying till he is harmless to his wife and future children. In this case syphilis will develop and die out in him without having given rise to other syphilis. This is the type of syphilis which I call *sterile*.

On the other hand, consider the case of a woman of the demi-monde affected with syphilis. As a rule, she undergoes insufficient treatment, and the disease continues to recur by a series of contagious outbreaks, each of which may transmit the disease to others. And it is worse in the case of a common prostitute, who, if affected with a buccal or vulvar mucous patch, may infect any number of persons and still worse in the case of a clandestine prostitute who escapes all supervision.

To quote figures is impossible, because the facts cannot be analyzed, but some information has been collected in military quarters, where soldiers have made a declaration as to the woman who infected them. Thus, an army surgeon reported

to the Academy of Medicine four cases, in which six, eight, ten, and twenty-two soldiers respectively had been infected by the same woman.

For my part, I can mention the following case among many others of a similar nature: A woman who came to the St. Louis Hospital with enormous vulvar condylomata informed us that she had suffered from these for five months, and had undergone no treatment. During the whole of this time, while practicing prostitution in a wine shop, she had received from two to six men every day! Taking an average of three connections daily as a minimum, this comes to a total of four hundred and fifty connections during the five months; and supposing that one only of these three connections was contagious (which is probably below the mark), we arrive at the fact that this woman must at least have infected one hundred and fifty men in the five months during which she carried on prostitution with condylomata in full bloom!

Moreover, most of these unfortunate women of the lower ranks of prostitution make no secret of having transmitted contagion. One of them actually said to me: "These filthy men have given me a foul disease, but I have had my revenge, for I have certainly given it to more than a hundred others"!

These are cases *par excellence* of *fecund syphilis*—that is, syphilis which serves as the origin of a great number of contaminations.

The next point for consideration is to investigate the conditions which cause the fecundity or sterility of syphilis—in other words, what are the conditions according to which a given case of syphilis gives rise to other cases of syphilis or not. These conditions are extremely numerous and varied, but it will suffice for my subject to mention the principal ones. Thus, syphilis may be more or less fecund or more or less sterile—

1. According to the *quality of the medium* in which it evolves. Thus, there is an enormous disparity as regards the number of possible contaminations between the syphilis of a prostitute and that of an honest married woman infected through marital infidelity.

2. According to the *treatment*. Treatment is essentially a

sterilizer, by diminishing the number of lesions which may spread contagion. Inversely, the absence or insufficiency of treatment act precisely in the opposite direction.

3. According to the *quality of the disease*. There are cases of benign syphilis which yield almost immediately to treatment, and remain quiescent after the first few months, while there are others subject to incessant recurrences. In smokers, for example, the recurrence of buccal syphilides often continues for three, four, or five years, or even longer.

4. According to whether patients are *hospitalized* or not at the time of contagious eruptions, which constitutes a safeguard for society.

5. According to *social conditions*. It is obvious that numerous risks are caused by misery, by promiscuousness which is derived from misery, by the crowding of a whole family in a single room, by the common bed, by scanty linen, by the common usage of articles of toilet, feeding utensils, etc. Cases of contamination, direct or indirect, caused by the intimacies of domestic life, can be counted by thousands.

6. According to *unexpected conditions*, accidental, professional, or otherwise, which sometimes cause extraordinary dissemination of syphilis—for example, syphilis among glass-blowers (p. 411); syphilis conveyed by drawing the breasts (p. 432); syphilis conveyed by midwives (p. 436); vaccinal syphilis (p. 399).

THE CONTAGIOUS LESIONS OF SYPHILIS.—The next question to consider is, what are the lesions and pathological products of syphilis which convey contagion? On this point, which has been the subject of prolonged investigation, clinical experience shows that syphilis is conveyed by the following lesions:

1. By the initial *chancre* and the suppurative lesions of secondary syphilis, such as *mucous patches*.

2. By the *blood*, and by *vaccine* inoculated with syphilis from a syphilitic soil.

3. Probably from certain suppurative tertiary lesions.

Leaving aside contamination by the blood, vaccine, and tertiary lesions, which are rare or controversial, there remain contaminations by the chancre and the mucous patch. These

are undoubtedly the origin of the great majority of syphilitic contagions, and it is shown by experience that the mucous patch causes far more contagions than the chancre.

Danger of the Mucous Patch.—We may say approximately that out of ten syphilitic contaminations one is derived from the chancre as against nine from the mucous patch. And how can it be otherwise?

1. The chancre has only a limited existence of a few weeks.

2. The chancre only occurs once in the whole course of the disease, and is not reproduced.

3. The chancre, with its induration, ulceration, and satellite bubo, is more observable and more observed than the mucous patch, and consequently more attention is paid to it.

While, on the other hand—

1. The mucous patch is essentially liable to recurrence, even ten or twenty times.

2. The mucous patch is a lesion with multiple localizations, which may affect the mouth more often than the genital organs.

But many people believe that syphilis, as a venereal disease, is confined to the genital organs; and many, thinking that contagion is only transmitted by coitus, expose themselves to the risk of contagion by the mouth.

3. The mucous patch is a lesion which may occur several years after infection, even ten years after the chancre, at a time when the disease is believed to have ceased to be contagious.

4. Lastly, the mucous patch is especially dangerous by the excessive benignity which it often assumes, when it consists simply of a superficial erosion. Many patients, deceived by such appearances, expose themselves to transmit contagion.

Here are a number of excellent reasons to explain why *the mucous patch causes an infinitely greater number of contagions than does the chancre.*

For example, the contamination of wet-nurses is almost invariably due to a mucous patch in the mouth of the suckling. Again, the infection of married women is almost always caused by a mucous patch in the husband.

Of all the lesions of syphilis, it is the mucous patch from

which is derived the greatest number of contaminations. Therefore, *from the point of view of the sterilization of syphilis, it is the mucous patch which it is necessary to prevent, and to attack when it is produced.* This is an incontestable truth which concerns the public safety.

Preventive Methods

The above premises being necessary for the discussion of the main question, we have now to consider by what means syphilis in course of evolution can be rendered sterile, or, at least, reduced to the minimum of contagiousness.

The sterilization of syphilis is an extremely complex subject, since the fecundity of syphilis is derived from a considerable number of causes, and the work of the hygienist is to endeavor to dry up the numerous and diverse sources of contamination. I can therefore only skim the subject. However, if it is impossible to exhaust the subject, I can at least point out the general preventive measures which apply to the greater number of cases, and from which we may expect the most useful results.

1. *Prevention by Treatment.*—This takes the first place, for treatment is *par excellence* a sterilizer of syphilis in that it prevents lesions, cures them, and dries up a number of the sources of contagion. If the treatment of syphilis was carried out with this special object in view, it would render the most useful services.

2. *Instruction of Patients with regard to the Dangers of their Syphilis to Others.*—It is shown by daily experience that a number of syphilitic contagions result from the ignorance of patients concerning the danger of the disease to others. Therefore, it behooves us as hygienists and medical men to *educate patients* in the many and diverse dangers of syphilis.

In private practice this is an easy matter. We have there the time necessary to instruct our patients on all things which they require to know, and to instruct them on the dangers in question should be for us a social duty. But in hospital it is another thing, and when dealing with two or three hundred

patients it is impossible to repeat these instructions thirty or fifty times a day. It is therefore advisable, as I have already proposed, to give printed instructions to each patient, explaining in simple terms the directions for treatment and the dangers of infection (see p. 458).

3. *Hospitalization.*—It is obvious that hospitalization constitutes an excellent means of sterilizing syphilis, both by the effect of treatment and by sequestration of the patient and his disease from the outside world. From this point of view, it would be desirable for every patient affected with contagious syphilitic lesions to have the right of admission to hospital. This alone would prevent a number of contaminations. But, as regards syphilis, hospitalization will never be more than a very imperfect means of sterilization, for the two following reasons:

(1) On the one hand, it is impossible to hospitalize a syphilitic subject for the whole time that he is contagious. To keep a syphilitic person in hospital for the two or three years during which he may be contagious (which is only a minimum period) would be a practical absurdity.

(2) On the other hand, even if we had in our hospitals beds to offer to syphilitic subjects, would they accept such prolonged hospitalization? As they have to earn their daily bread, they would decline such an offer for a hundred reasons which are needless to mention.

As I have repeated so many times, it is not by hospitals that we can treat, cure, and sterilize syphilis, but by well-conducted external consultations (*vide* Chapter XXXVII).

4. *Supervision of Prostitutes and Internment of those who are Infected.*—In the name of both good sense and experience, this coercive measure furnishes a very useful contingent to the sterilization of syphilis.

Nevertheless, the medical supervision of prostitutes has been combated a thousand times by the most diverse arguments. In 1875 it was attacked more vigorously than ever by a society originating in Anglican piety, organized against the regulation of all prostitution, under the name of the *British, Continental, and General Federation.* The associates of this league are

generally known by the name of *abolitionists,* because one of their evangelical aims consists in the abolition of all measures tending to suppress prostitution administratively. I shall discuss later on the objections raised by the abolitionists against the system of regulation of prostitution—objections which are already superannuated and refuted to satiety.[1]

[1] *Vide* Chapter XLII

CHAPTER XLI

INSTRUCTION OF YOUNG MEN IN THE DANGERS OF VENEREAL DISEASES

SHOULD the students in academic centers be enlightened on the dangers of venereal affections or not? and if so, to what extent and by what means?

Before probing to the bottom of this question, a point of prejudice must be examined. Is this question one of prime importance, owing to an actual frequency of venereal disease at an early age—that is to say, during the academic life between the ages of sixteen and nineteen? For if these youthful contaminations are only exceptions, they hardly require general measures to be taken against them; while, if they occur with a certain degree of frequency, preventive intervention is only too legitimate. This point can only be settled by clinical experience.

1. First of all, is syphilis common before the twentieth year?

In statistics obtained from ten thousand cases of syphilis observed in private practice among subjects of the upper and middle classes, and all derived by sexual intercourse, I find eight hundred and twenty-two cases of contamination before the twentieth year.[1] In other words, rather more than eight per cent. occurred between the fourteenth and nineteenth years. Among the lower classes this figure rises to thirteen per cent.

2. With regard to gonorrhœa, out of the last one thousand cases which I have treated in private practice, I find one hundred and twenty-two cases before the twentieth year, or about twelve per cent.

3. If we add the results of these two statistics, we find that

[1] For details, see p. 479.

among the upper and middle classes at least ten per cent. of venereal affections are contracted at the academic age.

4. The gravity of these juvenile contaminations is exactly the same as that of infection at a later age. The proof of this is shown by the examination of six hundred and fifty-three cases of syphilis of the brain, in which I found that sixty-five were derived from syphilis contracted between the ages of fourteen and nineteen—a proportion of about ten per cent. In other words, this terrible manifestation of syphilis which in seventy-eight cases out of one hundred ends in permanent disablement or death, originated in disease contracted before the twentieth year *in one-tenth of the cases.* This figure of about ten per cent. almost invariably occurs in the different statistics, and may therefore be accepted as near the mark.

If, then, a tenth of venereal affections, and syphilis in particular are contracted during the academic age, we are justified in stating that these juvenile contaminations are sufficiently numerous to cause anxiety, and that we should lose no time in seeking by what means this frequency may be diminished.

At the International Congress at Brussels the following proposition by Professor Lassar, of Berlin, was unanimously adopted:

"The governments are requested to seize every opportunity to draw the attention of the public, and especially of young people, to the dangers of prostitution with regard to the health of persons of both sexes, and to the evil results of venereal diseases."

It is unnecessary to dwell further on this point, for the dangers of a venereal kind which threaten the young man are common knowledge. The father of a family is often in a state of anxiety when his son reaches the age of seventeen or eighteen. Should he let matters take their own course, or should he interfere? and if so, how?

This problem is a difficult and delicate one, so that, in addition to my personal opinions, I have judged it opportune to institute an inquiry on the subject by interrogating many persons whom I have met. The result has been to obtain the most heterogeneous opinions—in fact, all opinions possible. The

greater number have approved of the proposal to instruct students on the dangers of venereal diseases, some of them lamenting for personal reasons that such instruction was not given them in their student days. Others are of opinion that no advice will prevail against youthful ardor, and that what the student is taught in theory he is not likely to carry out in practice. A few revolt at the idea of initiating a novice into venereal perils, and exclaim that "to speak of syphilis to students is to admit in principle that they may succumb to it; and to admit this before them is almost to sanction the fault, or excuse it in advance. Then, if they are not already informed of such unchastity, you would educate them on this subject, and open up an obscene horizon."

In short, the proposal to initiate the elder students of academic centers into the dangers of venereal disease is generally regarded with favor, as being capable of producing some good; by others it is considered as indifferent in the same way as all measures of the same kind; by some it is disapproved of for the reasons mentioned.

Let us discuss these different points of view, commencing with that which reproaches the said proposition with the power of causing harm to youth. We are told that this project runs the risk of deflowering innocence, of exciting morbid curiosity, of awakening premature appetites—that it would result in instructing young people in things which they ought not to know, and in initiating them into the unchastity and miseries of sexual life, which they cannot learn too late. We are almost accused of exciting to debauch.

To this I reply as follows:

1. In the first place, a great mistake is made as to the state of mind of the elder students, the only ones whom we intend to address. They are far from ignorant of the mysteries of sexual life—at least, in theory—and would be greatly offended by being honored with the purity of a St. Agnes. By their reading, and still more by their conversation, they have made their novitiate in all these things. It is a well-known fact that pernicious literature is expressly read at an early age. Some time ago I came across a stock of books of this kind, and asked

the bookseller who bought such filth. He replied: "Monsieur no doubt forgets the students!"

Therefore, in speaking of such matters to students of sixteen or eighteen years of age, there is little fear of opening up new horizons to innocence.

2. It is objected that we propose to instruct young people in things which they ought not to know, and which can never be known too late. I reply that they ought to know the things which we wish to teach them, for these things may be their safeguard. They are at the age of the first sexual aspirations, which it is well known they do not always resist. We have seen that out of one hundred cases of syphilis about eight are contracted between the ages of fourteen and nineteen, and that out of one hundred cases of gonorrhœa, about twelve are contracted at the same age. In other words, as I have already pointed out, a tenth of venereal disease is contracted during the academic age. Therefore, if we wish to prevent as far as possible these early contaminations, it is wise to take them in time, and to intervene at the age of sixteen or nineteen is not too soon.

"The study of these questions is wrongly considered as a dangerous subject which should not be mentioned in the presence of young people. The tactics of the ostrich are adopted, which consist in shutting the eyes to danger instead of facing it openly. But it is time to break with exaggerated scruples, with the convention of mystery and silence, with the ridiculous prudery which is more afraid of words than of the evil itself. There are truths which are more dangerous to keep silent than to hear, which we should have the courage to proclaim on the housetops when they concern the warning off of a veritable social peril. Is it not better to speak of them frankly than leave the initiation to chance by frivolous conversation and reading, by temptations and adventures which are precisely those to be avoided and prevented?"[1]

After all this, I think the objection made to our project will not bear examination. Surely this project is not of a nature to endanger the innocence of students.

[1] Carriére, "Hygiène et Morale," 1901.

On the other hand, is it capable of fulfilling our intentions and realizing some preventive result? I believe so, for the following reasons:

As a general rule, it must be admitted that the revelation of a danger leads to the preservation of some one from this danger. In this case we are dealing with intelligent young persons, naturally curious on this subject, who will listen eagerly to what is told them, and discuss it among themselves. In this way a healthy knowledge of the venereal danger will be established by mutual instruction. Whatever skeptics may say, it is probable that this knowledge will make some of these young men more circumspect and less rash than they would be without it. I do not mean to say that in the knowledge of danger they will not expose themselves to it, but I maintain that they will expose themselves less often, less easily, and less foolishly, and that in this way a certain number of these unfortunate contaminations at an early age may be prevented.

I will add that this collegiate instruction on the venereal danger would be particularly useful to a certain class of young men who will never receive it in any other way—namely, those who, being removed from their homes, have not had the benefit of parental instruction; those who have lost their fathers—in fact, those who, for one reason or another, have been deprived of any knowledge on the subject.

It is also my opinion that for many young men a scientific lecture delivered at college on the subjects in question would have much more effect than all the warnings emanating from the family hearth. A student—even a *nouveau-siècle* student—will listen with respect, or simulated respect, to what his father may tell him concerning these ticklish subjects; but too often he is only moderately impressed by the parental sermons, which he regards as exaggerated and prudish. But I am convinced that he will pay much more attention to instruction given by one of his professors, or by a medical man speaking in the name of science.

Moreover, the experiment of such instruction has been made at the Agricultural College, and, as I am informed by a distinguished student of this college, the experiment was successful.

I am, therefore, firmly convinced on the first point—that the instruction of students in academic centers with regard to the dangers of venereal affections, and syphilis in particular, would be of real utility.

This being admitted in principle, we have next to consider *to what extent and by what means this instruction is to be carried out.*

To what extent? To the extent of utility, and nothing more. One lesson would be sufficient to explain the dangers of venereal disease, and the programme of this lesson should be constituted as follows:

1. To explain that from sexual commerce with prostitutes certain diseases called venereal are derived with great frequency, the principal types of these diseases being gonorrhœa, soft chancre, and syphilis. To describe the chief characters of each of these types, and to dwell more particularly on syphilis.

To point out, with regard to syphilis that it is of insidious development, divided into three periods: the first insignificant in symptoms; the second comparatively benign; but the third, called tertiarism, infinitely grave. To explain that this disease constitutes a general poisoning of the whole system, capable of affecting any organ (the skin, mucous membrane, bones, joints, eye, tongue, throat, larynx, lung, heart and arteries, kidney, testicle, nerves, brain, and spinal cord), and consequently manifesting itself by a number of different symptoms, such as cutaneous eruptions, eruptions of the mucous membrane, ulcerations, mutilation of organs, pains in all situations and of all degrees, neuralgia, neuroses, disorders of sense, paralysis, hemiplegia, intellectual decay, softening of the brain, insanity, etc.

To point out that it is capable of infinite duration, sometimes lasting for life, and that its tertiary effects may occur thirty, forty, or even sixty-five years after infection.

Finally, to add that it is transmitted by heredity, and that its hereditary consequences may cause the death of sixty per cent. of children in private practice, and eighty-four to eighty-six per cent. in hospital patients, and mark the survivors with dystrophies, infirmities, and degeneration.

2. After this review of the symptoms, to consider the question of prognosis, and to attack the foolish but prevalent doctrine that syphilis is an insignificant disease which every one has had or will have, and which is cured by itself or with a little mercury. To point out that, on the contrary, syphilis is always a serious disease, often very grave, and more often fatal than is generally believed. To present it as sometimes rebellious, recurrent, and refractory to treatment.

To produce as an example syphilis of the brain, which out of one hundred cases taken at hazard is only cured twenty-two times, while seventy-eight times it ends either in death or survival with permanent disablement, such as paralysis, hemiplegia, or mental decay.

To add that in some of its manifestations, such as general paralysis and locomotor ataxy, syphilis is not influenced by any treatment.

3. On the other hand, to establish the fact that syphilis is not the result of a series of contagions or of accumulated debauches, but that it is contracted by a single contagion, by simple contact, however short in duration, with a contaminated person; so that a single connection is sufficient to cause infection, and a minute of forgetfulness is enough to poison a whole existence.

4. Lastly, to signalize the danger of all connection with prostitutes. To affirm, from official figures, that nearly the whole of women who make a profession of prostitution are, or have been, infected with syphilis. To emphasize in particular the frequency of venereal diseases among clandestine prostitutes, the street-prowlers, the women in wine shops, the women who frequent the public balls, etc. To quote certain statistics showing that the frequency of these affections reaches the figure of forty-eight per cent. in clandestine prostitutes.

Such, I believe, is what the students of our colleges should know in order to protect them.

The last point to consider is, *how should this instruction be carried out?* This might easily be done by a lecture delivered by one of the professors, or preferably by medical men. It would also be better for this lecture to form part of a course of

lectures dealing with subjects concerning the preservation of health. The proper place would be in an elementary course on hygiene, such as is given in some colleges. Also, the lecture in question should be included among *preventable diseases,* such as typhoid fever, small-pox, alcoholism, etc.

The Society for Sanitary and Moral Prophylaxis, after a long discussion on this subject, adopted the following resolutions:

"1. It is desirable that in academic centers young men of the upper classes should be enlightened on the dangers of venereal diseases by special instruction.

"This special instruction, without in any way injuring morality, could be given to all students over sixteen years of age, with the authority of their parents or tutors.

"2. This special instruction should consist in a lecture delivered annually, either by a professor or, preferably, by a medical man specially appointed for this duty by competent authorities.

"It would naturally find a place in an elementary course on hygiene, especially among preventable diseases—a course which is, or should be, delivered to students of this age in all academic establishments.

"3. It concerns the discretion of the directors of academic establishments to decide whether there would be any advantage in substituting for the annual lecture personal warnings and conversations with their pupils on the subjects in question.

"4. A complementary safeguard would consist in supplying each student with printed instructions on the venereal danger, according to the programme of the Society for Sanitary and Moral Prophylaxis."

CHAPTER XLII

ABOLITIONISM

(Abolition of the State Regulation of Prostitution)

Of the three prophylactic measures which may be employed against syphilis and venereal diseases—moral, medical, and administrative—if the first two are accepted in principle, it is not so with the third. This is a veritable hotbed of discussion, an inexhaustible source of contradictory and polemic doctrines, even of the most violent quarrels. In fact, it is on this ground that two radically opposite schools meet and give battle, the one accepting or even invoking administrative intervention in the prophylaxis of syphilis and venereal diseases—an intervention which shall be legal, humanitarian, and in conformance with modern ideas, and consequently very different to the old system of *police des mœurs*—the other opposing all intervention by public authorities in the matter, considering the supervision of prostitutes, their "inscription," their medical examination, their internment in case of disease, etc., as outraging the liberty of the individual—in fact, only accepting as a programme the famous device of "the free woman on the free pavement."

This last school, who, although less numerous, makes none the less noise, has taken the name of the *abolitionist school,* because its object is the abolition of all administrative measures with which public opinion long ago attempted to stem the tide of the venereal plague. In opposition to this is the *regulationist school,* which looks for safety in an assemblage of administrative measures. It is the study of the abolitionist question that I now propose to consider.

First of all, how are we to define abolitionism? and what is included in this term, which is singularly elastic in meaning, and capable of different interpretations?

Is abolitionism constituted indifferently by every infraction

of the regulationist programme as it has been applied among us for a century? Is it sufficient, in order to be called an abolitionist, to aspire to some amendment or reform in the said programme? Certainly not; for on this reckoning who would not be an abolitionist? From this point of view, the Academy of Medicine would be abolitionists, who in 1888 gave such a vigorous blow to the old system of police supervision. For my part, I should also be an abolitionist, and Heaven preserve me from what I consider as a scientific heresy leading to a social calamity! So that we must not confuse the reformer, who seeks to obtain better results than were obtained before, with the true abolitionist, who, hygienically speaking, is a nihilist, whose only object is to demolish, without troubling about rebuilding on the ruins. The true abolitionist is the man who in principle, and without discussing the ways and means, opposes all interference by the public authorities in the hygienic prophylaxis of the venereal danger derived from prostitution. This is the man who professes that "the administration has no right to examine women who practice prostitution in the public streets; it has no right to detain these women, even when infected with syphilis or gonorrhœa; it has no right to sequestrate them during the time when they may spread contagion; to act thus is to commit a hygienic error, a social injustice, and a crime."

Abolitionism only appeared on the scene as a militant doctrine about thirty years ago, after the agitation caused in England by a very feeble attempt at the regulation of prostitution by the English Parliament in 1864. The protest against this measure originated, curiously enough, in a female camp—"in the name of the great principles which had hitherto protected the liberty, honor, and personal inviolability of English citizens against the tyrannical interference of the State." This revindication was successful, especially because its promoters were cunning enough to introduce it into the political elections; so that a few years later, in 1875, it formed the basis of a society founded by a woman, "with the assistance of several Christians," which soon became an important body, known as the *International Abolitionist Federation.* The founder of this

society was Mrs. Josephine Butler, wife of the Rev. G. Butler, of Liverpool, and it is, thanks to the initiative of this remarkable woman, to her great authority and prodigious activity, that this society extended and prospered.

This society was recruited at first in the Protestant element, especially among Quakers, and then in women's associations, which took a leading part in the abolitionist cause. It was not long in penetrating into all social strata, by means of active propaganda directed by certain journals. It soon crossed the Channel and invaded the Protestant countries of the Continent—Holland, Switzerland, etc.—and finally made its appearance in France, where it has a special branch at the present day. All this time it has never ceased to assert itself by an uninterrupted series of publications, meetings, annual reunions, and even international congresses, which every three years hold their meetings at Geneva, Genes, La Haye, London, Brussels, etc., and most recently at Lyons. It cannot be denied that the Abolitionist Federation has become a power—at least, in England, and in some Protestant centers on the Continent.

In 1864 the English Parliament, moved by the ravages which venereal diseases made among the troops, attempted the regulation of prostitution in a certain number of naval and military stations, to the number of fourteen. Four laws were passed, under the name of the Contagious Diseases Acts. By these Acts any woman who was proved by the police to be a common prostitute could be sent by a magistrate to a certified hospital for examination, and detained if diseased. The magistrate also had power to order the woman to submit to periodical medical examination so long as she continued to practice prostitution within the limits of the district under the operation of the Acts. It was against this legislation, which was considered as a double affront to individual liberty and decency, that the Federation was founded. From 1875 to 1886 all the efforts of the society converged on this sole object—the abolition of the Acts—and carried on a campaign which Mrs. Butler herself described as a "great crusade."[1]

[1] "Personal Recollections of a Great Crusade," by Josephine Butler. Paris, 1900.

According to custom, they proceeded against the Acts by means of a petition, and on the list which was presented to the House of Commons in 1885 there were no less than twelve thousand signatures of ministers representing all the reformed churches of the United Kingdom. On the evening of the day for voting on the Acts in the House of Commons a meeting took place in Exeter Hall, at which the highest dignitaries of the Church of England, the most radical Methodists, Quakers, and Salvationists met together.

Heaven could not but show itself favorable to such pious homilies, and the repeal of the Acts was voted by Parliament in 1886 for the United Kingdom, and in 1888 for India. Henceforth prostitution, and syphilis with it, regained its liberty throughout the British Empire!

This was no doubt a triumph, but the Federation, justly proud, has striven since then to gather fresh laurels. Its field of action was transferred to the Continent, where it gained further success and also suffered some reverses—as, for example, at Geneva in 1896. But these are only details, while what is essential to recognize is its sustained activity, which it has not ceased to display since its foundation, its perseverance, and the ardor of proselytism which distinguishes it. It is animated with that religious faith which knows no obstacles and raises mountains.

Up to the present, however, there is hardly any need for anxiety. We may even say that up to the present—among ourselves, at any rate—abolitionism has not been taken seriously. It has only been considered as a doctrine of sentimentalism, which good sense will suffice to do justice to, or as a weapon for the use of public meetings. More often it has caused amusement by casting ridicule on the pietists and the good ladies of the Salvation Army. But this is a mistake. In reality abolitionism is an enemy which must be reckoned with. It is even, I regret to say, a powerful and skillful enemy which must be opposed. See what it has accomplished among our neighbors, to the extent of forcing the hand of Parliament for the repeal of the Contagious Diseases Acts. Moreover, we must not lose sight of the fact that abolitionism is chiefly reën-

forced by the Protestant clergy, who, disinterested in temporal affairs, only aspire to regain in this world the reign of purity, justice, and morality for both sexes. But it is not composed only of this element: it has recruits among the independents and free-thinkers; and, what is more, it has gained a footing in politics. It serves as a banner for certain parties, and takes part in political and electoral programmes. Therefore, by rendering services to politics, it has the right to expect a return for services rendered. Hence, it is not impossible that, on the day when its supporters are in the ascendence, we may have in our country the equivalent of what was called the repeal of the Acts on the other side of the Channel. That is the danger.

But let us return to our subject, and inquire into the objections raised by abolitionism against what it is pleased to call regulation. According to it, regulation is the abomination of desolation. It overwhelms it with reproach and sarcasm. Let us see what these accusations are worth.

1. First of all, we are told that regulation is *illegal,* in the sense that it is not based on any law. On this point I am inclined to yield to the abolitionists without discussion, for it is true that there is no special law in our codes which defines the suppression of public prostitution.

Lawyers, medical men, and hygienists have long expressed the opinion that if the suppression of prostitution is necessitated in the interests of public health and morality, it should be founded on fixed principles and on a legal basis. This was clearly specified at the International Medical Congress in Paris in 1867. Also, in 1888, the Academy of Medicine requested the public authorities to render the powers of the administration beyond dispute by making a special law for the purpose. Therefore, every one is in accord on this point; but to this question, as to so many others, Parliament has always turned a deaf ear.

2. In the second place, regulation is said to be *unjust,* because it treats men and women unequally. It is said that "the same act of prostitution for which two persons are necessary is tolerated in man, but condemned in woman. There are therefore two different moralities, according to sex. Again,

if contagious disease occurs, the infected woman only is dealt with, without going to the source of infection. The poor sinner is imprisoned, while her accomplice, who is the real culprit, goes free."[1]

This argument, which has been repeated *ad nauseam,* is absolutely devoid of sense, and signifies literally nothing; for it only comes to this: that the woman is punished when she commits a public act of prostitution, while the man is not, because he does not commit the same act. I will explain.

Prostitution is only liable to measures of suppression on the occasion of its external manifestations. Between four walls it is mistress of the situation, but in the street it is another matter, and there it is submitted to certain rules. But these external signs of prostitution consist almost exclusively in what is called *soliciting,* under different forms which it is unnecessary to describe here. But who practices solicitation? Women exclusively. I do not see men stationed at the corners of the streets, accosting women who pass by and requesting them "to go home with them." The "public man" corresponding to the public woman is a type which does not exist.[2]

Therefore, the law, which is only concerned with the external signs of prostitution, punishes the woman who practices solicitation and does not punish the man for the same act, for the simple reason that he does not commit the said act. Nothing is more simple or more logical. Therefore, again, there is no injustice and no partiality in favor of men at the expense of women.

3. Regulation, according to the abolitionists, is *immodest, obscene, and cynical,* on account of the examination imposed on women for the detection of venereal disease. It is the medical inspection which causes the greatest offense to the members of the Abolitionist Federation, especially the English ladies. It literally chokes them, and few could imagine all that has been written on this subject. For example:

"Medical inspection is an offense to the dignity of woman.

[1] Mrs. Butler, "A Voice in the Desert," 1875.

[2] TRANSLATOR'S NOTE.—Professor Fournier apparently forgets the type of male prostitute which is so common in London, who solicits members of his own sex for purposes of sodomy.

It is at the same time an act of tyranny, an outrage, a degradation, an infamy, a sacrilege, a crime, etc. It is an abominable, horrible, execrable act, which causes the degradation of woman. This inspection reduces woman to slavery; it makes her a thing, and not a person—an instrument, a slave, anything but a woman. It is even an insult to all women considered as our sisters. Nothing can authorize the outrage of these women, the violation of their poor bodies; nothing can give the right to force them to expose their most intimate physical nature. This inspection is the renovation of torture. To examine a woman is to pollute the cradle of humanity by a profane practice."[1]

The wrath of the abolitionists extends even to the doctors, who outrage women by examining them. M. Yves Guyot calls them the "Custom-House officers of syphilis"; and in no less polite terms the treasurer of the same society qualifies them as "scientific scoundrels." Even the medical students, although innocent of such iniquities, do not escape the abolitionists.

As far as we medical men are concerned, we can only smile at such things and other amenities of the same kind, a rich collection of which may be found in certain abolitionist publications, notably in a book on prostitution by M. Yves Guyot. But as regards the women, they would be truly much astonished at learning that they are outraged by the speculum, when they spend their days and nights in outrages which are much more serious for the "cradle of humanity"!

Nevertheless, let us hasten to reassure the good ladies of Albion on the fate of those whom they charitably call their sisters, and calm their unreasonable apprehensions for these "lost sheep." This redoubtable medical inspection, whatever has been said of it, has nothing which recalls the scenes of torture of the Inquisition nor the stakes of Calvin. All is done decently and without violence, and even the physicians who exercise the "priesthood of the speculum" only practice it in accordance with professional dignity.

4. In the fourth place, regulation is said to be *corrupting*, because it renders debauch more common by reason of the

[1] Mrs. Butler, "The Great Crusade," p. 230.

security which it offers. For instance, M. de Pressensé proclaims that, "wherever there exists a sanitary law concerning prostitution, as in France, it is the State which favors this commerce in bodies and souls; which guarantees and patents it; which renders easy the first step to vice; which increases vice to a considerable extent, etc. This prophylaxis contributes to the corruption of young men and the blasting of the conjugal hearth."[1]

Is it necessary to reply to such accusations? Truly the State is made the scapegoat of all the sins of Israel! But in reality, has it ever attempted to corrupt the minds of its subjects? Has it ever in any way recommended the women on whom inspection is imposed? Has it ever invited any one to debauch by soliciting its preference for these women, and promising a guarantee for them which is not offered for others? These are all arguments worthy of the speakers at public meetings. It is obvious that the State has never corrupted any one; besides, if it pleases any fool to place confidence in such women, he has only himself to blame in case of misfortune.

Moreover, a fact which shows that regulation has not exercised the corrupting influence with which it has been accused, and that medical inspection, in spite of the guarantee which it appears to offer, has not the attraction which it is supposed to have, is *the progressive and continuous decrease in public brothels.*

With common consent it is in the public brothels that administrative supervision is most easily and most completely carried out, so as to offer the public a better guarantee of security than is the case with free women, who easily avoid inspection, and especially with clandestine prostitutes, who escape all supervision. Therefore, it follows that more clients should be attracted to the public brothels owing to their comparative security, and these houses should prosper and increase in number. On the contrary, their custom diminishes, and their number has continually decreased for sixty years in Paris, the provinces, and abroad. This fact is curious, and requires proof. Here are the figures for Paris:

[1] *Bulletin Continental*, 1876, p. 60.

235	public	brothels	in 1841	126	public	brothels	in 1881
219	"	"	1851	60	"	"	1891
196	"	"	1861	48	"	"	1901
142	"	"	1871				

In the same time the population of Paris has tripled—from 1,194,000 to 3,599,000; that is to say, that in sixty years the public brothels have become five times less numerous, while the population has tripled. How, then, can it be maintained that regulation is corrupting by the security which it offers?

5. Regulation is said to be *immoral.* Under this somewhat elastic term are included a number of differently expressed accusations which are not easy to classify.

Regulation is said to be immoral because it "compounds with prostitution"; because it "sanctions and protects the most flagrant immorality"; because it is "contrary to Christianity, which places fornication among the worst of sins"; because it legalizes vice and makes the State an accomplice, for "to regulate the practice of prostitution is to recognize its utility, and to proclaim it necessary and legitimate: the State thus elevates prostitution to the rank of a common industry, trades in debauch, and becomes the great monopolizer of vice, the prime minister of sin"; because it constitutes "an official inducement to debauch, a veritable state agency with the privilege of medical sanitation"; because it "legally subjects woman to public vice"; because "it creates a class of women slaves for the pleasure of libertines, sacrificing the humble for the pleasure of others, and sacrificing women of the lower classes to the debauches of the upper classes"; because it "places the health of the vicious under state protection for the greater impunity of incontinence and immorality," etc.

To these quotations, which are all textual, I could add others of the same kind no less declamatory, no less sonorous, and no less hollow! For what is left of these grievances when they are analyzed, and especially when we question in what way they render regulation responsible?

First of all, is it the State which makes prostitution? It finds it already made. What benefit would it obtain by creat-

ing, protecting, legalizing, and monopolizing the centers of debauch, to give itself the trouble to contend with them afterwards? It is difficult to conceive the state of mind which imputes such monstrosities to the State.

Again, finding prostitution established, the State has the good sense not to try and abolish it, for it knows from the lessons of history that prostitution is the stronger of the two, and will resist successfully, as it formerly resisted Charlemagne, Louis XIV., Marie Thérèse, etc. But, if it allows it to continue, it none the less imposes laws of a sanitary and moral nature. On the one hand, it insures the decency of the streets; on the other hand, it cleans the mire as far as it can.

The State does not favor prostitution, as it has been accused, neither does it legalize it; it tolerates it, being capable of nothing more. But it only tolerates it in restraining its demoralizing and contagious expansion. And this is said to be immoral! For my part, I look upon it as both moral and beneficial.

Lastly, is it the fault of regulation that thousands of women stagnate in the lowest depths of society, serving for the pleasure of men? Certainly not, for it would be the same in the absence of all administrative intervention. The proof of this is that things are the same in countries where no regulation exists. The true reason of such misery lies in the social causes which constitute prostitution, and it is these causes, not the State, which are responsible for the state of affairs in question.

6. We now come to the last objection. Regulation is said to be notoriously *insufficient,* and therefore *useless.*

I admit that it is insufficient, but how can it be otherwise? It can only apply to a small portion of the public, constituted exclusively by prostitutes of the lower class. In Paris, for instance, it only deals with five or six thousand women, while there are thirty or fifty thousand women who live by prostitution. But is it to be abandoned because it only does a little good instead of a great deal? One might as well say that the police should be abolished because they do not arrest all the thieves!

On the other hand, it is said that regulation is useless, be-

cause it does not effect what should be effected, and that syphilis is as common in regulated as non-regulated countries.

This is a question which cannot be decided by statistics, for we have no complete and comparative statistics on the subject. On the other hand, the frequency of venereal affections in any country is subject to so many factors that it is impossible, as Neisser and Ehlers showed at the Brussels Conference, to judge by statistics the isolated action of any one of these factors. Moreover, there is something which is of more value than all statistics, and that is *common sense;* and the question is decided by common sense in the following way:

Suppose a woman affected with mucous patches is interned to-day at the Lock Hospital. What will she do to-night? She will sleep there harmless. What would she do to-night if she were free? She would certainly transmit syphilis to one or several men.

This very simple argument was well received at the Brussels Conference, where it was honored with the special title of the *argument of common sense.* On the other hand, it is odious to abolitionists, who will never forgive me for it.

. . . . . .

Such are the principal accusations hurled by the abolitionists against the system of regulation. I say the principal ones, because there are many others which I could mention; but these are of no importance, as can be judged by the following samples:

1. It has been said that *medical inspection offers no guarantee.* The only reply required to this is that medical inspection offers every guarantee if it is performed properly, but not if it is done badly. All depends on the medical man who makes the examination.

2. *Is not medical inspection liable to transmit contagion?* Certainly, if the medical man has dirty hands or dirty instruments. But why this suspicion in advance of the medical profession, a suspicion which is unmerited and out of place?

3. Here is another medical heresy which is often exploited by the abolitionist cause:

At the International Congress in 1889, the late Professor

Stoukowenkoff imprudently announced that regulation was "not in harmony with the facts of actual knowledge." Thus, he said, during its secondary stage syphilis is contagious even without lesions—that is to say, without appreciable manifestations—and this period may last from seven to ten years. Therefore, we can never affirm that a woman who has had syphilis for several years is not contagious by the fact that she has no appreciable lesion. Consequently, "what is the use of wasting time in looking for lesions in such women, since they may be contagious without lesions?" What an argument against medical inspection. What a godsend for the anti-regulationists! Unfortunately for them, the doctrine of Stoukowenkoff has not had the least medical echo, and is only based on a hypothesis.

. . . . . .

From the preceding account it is impossible not to be struck by the violent discordance of opinions raised by the special subject which we have been considering. It is truly remarkable to see men, who are equally intelligent and independent, and equally anxious for truth and public interests, come to the most contradictory conclusions, some regarding the regulation of prostitutes as a necessity and a safeguard for society, others rejecting it as an outrage. How can such radical differences of opinion be explained?

No doubt they are partly due to differences in social position, education, profession, religion, and politics; but it may be taken for certain that the principal cause of these dissensions lies in the different points of view in which one is placed and the results one hopes to attain.

For us medical men and hygienists, our position is simple and clear. What leads us to urge strongly the medical supervision of prostitution is, on the one hand, our professional experience of the dangers which result from venereal disease, and, on the other hand, the moral duty which is incumbent on us to protect society against these dangers. Our object is the *venereal peril,* and our aspiration the attenuation of this peril as far as possible.

The point of view of the abolitionists is quite different. I

refer to the group of abolitionists who compose the Federation, without taking into account a certain number of isolated members, who are animated by quite another spirit. For the abolitionists, the object in view is not the venereal peril; it is the *moral peril.* What they dread as the result of prostitution is sexual sin; what they aspire to, according to their favorite expression, is purity—purity for both sexes—for, as they repeat to satiety, there are not two moralities, one for man and the other for woman; there is only one, common to both sexes, which imposes continence on both, except in the married state.

But, to follow their reasoning, what is the origin of the immorality and incontinence which "Christianity places among the worst of sins"? What is the enemy which constantly provokes fornication and adultery? It is prostitution. And what form of prostitution more especially? "That which promises at the same time pleasure and impunity; that which the state organizes and regulates for the satisfaction of the vicious." Therefore, it is regulated prostitution which must be attacked "as the source of perdition *par excellence,* as the mortal enemy of souls and the poison of hearts, as the citadel of Satan" (Josephine Butler).

But what part does syphilis play in this programme? It is completely forgotten; there is scarcely any room for it in the preoccupation of the abolitionists. Their object is the safety of the soul, purity, and the avoidance of sin. As for syphilis, they hardly mention it; it is for them a negligible quantity. Was it not an abolitionist who made the singular proposal to take into account the certificates of health for promotion in the army, so that the soldiers could dissimulate their diseases, and consequently would go without treatment?

This noble contempt for the temporal is not openly professed by the abolitionists, but it shows itself in the whole system. It shows itself in the absence of any effort for prophylaxis based on other than moral measures. We may seek in vain in their innumerable publications for the least reference to hygienic or medical measures for prophylaxis. On the other hand, declarations such as the following appear:

On principle, there should be no medical supervision of

prostitution. The hygienic question is only "a miserable pretext intended to cover a dishonorable and impious institution" (James Stansfield), a pretext emanating "from a false and narrow-minded so-called medical science which regards itself as the sole depository of wisdom" (Josephine Butler).

Thus, every effort to sanitate prostitution is condemned in advance as contrary to the Christian spirit. But this is better still: "We do not deem it bad that a man who enters a brothel to satisfy his carnal lust should contract a shameful disease, and we should not waste time in pitying him."[1]

For certain fanatics, syphilis is not only a just punishment for sin, but an evil which is sometimes useful and sanitary, because it is an evil which God has sent to corrupt "luxurious flesh"! Syphilis thus becomes a salutary bridle placed by Providence on immorality, a natural guardian for our souls, and the safeguard of moral life, an agent of safety in another world!

And this is not all, for in confirmation of what precedes I must cite the texts of several of the apostles of abolitionism, who profess that, even if regulation should be recognized as useful from the point of view of hygiene, it should be rejected as harmful to morality; even should it be useful from the double point of view of morality and hygiene, it should still be rejected as iniquitous from the standpoint of individual liberty. In other words, even if regulation should end in suppressing syphilis, it would be necessary in the name of morality to *reject regulation and preserve syphilis!*

This is shown by the following quotations: "If, after the repeal of the Acts, the amount of disease had increased, this would not modify our attitude" (P. W. Bunting).

"If the safeguard were as real as it is fallacious, it would in no way render regulation legitimate" (Hirsch).

"Even if statistics succeeded in showing that it is possible, by the system in force, to diminish the diseases resulting from prostitution, our war-cry would remain the same as now" (Josephine Butler).

"Suppose that the hygienists were to completely attain their

[1] "What is the Federation?" by a Member of the Committee. Paris, 1898.

object, and could guarantee the health of the vicious, what would society gain? Dare they name the time when it will be possible to say to our sons, You can give yourself up to your pleasures without danger to your body? Morality comes before every other consideration; hygiene only comes in the second place" (Pierson).

Therefore, should we, by means of an idealy perfect system of regulation, succeed in annihilating syphilis, and purging the earth of this terrible plague, the abolitionists would immediately intervene, and say to us: "Stop! Let syphilis live, in the name of morality!"

In order to show that this is no exaggeration, I will quote the following declaration from an abolitionist pen:

"We abolitionists do not consider this result (the sanitation of prostitution) as the aim of our efforts. We hold that venereal diseases are in direct relation to immorality, and will only spread with this. If medical science succeeded in removing the punishment inflicted by Nature on vicious man, this discovery would be anti-social and demoralizing, for it would create a moral syphilization still worse than syphilis of the body."[1]

Briefly, the real truth of the matter is this: That the Abolitionist Federation is born from a Protestant clerical movement, the work of a religious league:

That since its foundation it has always been directed by a series of members animated by the same evangelical spirit, affiliated to a number of English and Continental churches, and assisted by a number of women's associations:

That it has always remained faithful to the programme of its foundress, Mrs. Josephine Butler—a programme which it is always interesting to recall:

"A holy war against impurity, waiting for the day when not only will the official fortresses of vice be overthrown in England and elsewhere, but when in every Christian country those who invoke the name of Christ will blush to speak of vice as a necessity, and to permit a portion of society to be

[1] Open letter to Dr. Strohmberg, of Dorbat, from Mrs. Scheven, published in the *Abolitionist*, May 1, 1902, and reproduced in the *Bulletin of the International Society for Moral and Sanitary Prophylaxis*, 1902, vol. ii., No. 2, p. 182.

subjected to the diabolical organization known under the name of official regulation of prostitutes."

That the evolution of this society has never ceased to accentuate itself in the religious sense to the point of taking shelter under the banner of the Salvation Army, and thereby estranging certain of its members.

In short, that it is, and never has been anything, but a *religious* society, and religious in the narrowest way, a society exclusively devoted to the defense of spiritual principles, but avoiding all hygienic progress and all efforts tending to a sanitary object.

After this, I cannot push the discussion further. Things of a religious nature only concern the conscience, and I bow respectfully before the faith and belief of the abolitionists. But what I have both the right and the duty to say is that a programme restricted in this way to solely spiritual and moral interests will not satisfy us as medical men, for, as medical men, we have to fulfill our duty to society.

This duty is to do all in our power to protect humanity against the venereal peril, especially against the terrible plague which is called syphilis. Syphilis we know by seeing its effects every day, and, knowing it, we have learned to fear it. We know it to be harmful to the individual who has the misfortune to be infected with it, to the family into which it is introduced by an infected husband, to the child, and to the country.

1. It is harmful to the *individual* by its numerous and varied manifestations, by its tertiarism, and especially by its parasyphilitic sequelæ, which are still more dangerous. All this is common knowledge, and I need only point out that the prognosis of syphilis has continually extended during the last forty years, during which time the disease has been studied etiologically, and a number of affections have been rightly attributed to it. Forty years ago, who ever spoke of syphilitic arteritis, nephritis, syphilitic aneurysm, or syphilis of the heart and lung? Who supposed, twenty-five years ago, that syphilis was the origin of tabes, general paralysis, leucoplasia, etc.?

2. It is harmful to the *family* for several reasons—contamination of the wife, resulting in separation; dissolution

of marriage, or divorce; material ruin of the family by incapacity or death of its head. Very often, in fact, it is the husband who pays to syphilis the debt of his bachelor days, and how many times this debt is liquidated by the entry of misery into the domestic hearth? What tragedies of this kind are caused by syphilis!

3. It is harmful to the *child.* It is generally agreed that syphilis constitutes a social danger by reason of its hereditary consequences, especially by the high mortality which it causes among children. Syphilitic heredity positively kills children by hecatombs, and the infantile polymortality of syphilis has become proverbial.

Besides this, there are the defects and degenerations which are caused by hereditary syphilis—defects of development leading to organic changes, deformities, arrested growth, and even monstrosities; for instance, to mention only a single type, the mental defects caused by heredo-syphilis, the subjects of which, according to their degree of mental decadence, are called backward, simple, unstable, crazy, imbecile, or idiots.

4. It is harmful to the *nation,* for it is no exaggeration to say that syphilis, by the obstacles which it brings to marriage or to fecundation in marriage, and especially by its terrible infantile mortality, constitutes a veritable factor in depopulation which is not appreciated at its full value.

This is what the medical profession learn by experience, and this is not all. Far from it. To cite only one example, we learn that syphilis affects others than those who expose themselves to it. Syphilis travels by *ricochets,* and may at any moment pass from those who expose themselves to it to those who do not. Therefore, it follows that to sanitate the brothel is not only to protect those who frequent it, but also to protect the virtuous woman, the family, and the child.

In accordance with these results, which are derived from experience, medical men and hygienists do not hesitate in concluding that—

1. Society finds, in the multiplicity and gravity of the dangers inherent to venereal affections, the legitimate right to defend itself against them by measures of public prophylaxis.

2. These measures are all the more legitimate as they serve, not only to protect those who expose themselves to contamination, and who could find a more simple means of protecting themselves, but also to safeguard those who do not expose themselves, especially the wife and child.

For these two reasons, society not only has the right to defend itself against the venereal peril; it has also the obligation and duty to do so. Does not this condemn the doctrine of the abolitionists?

In conclusion, I urge, in the name of hygiene and public health, *the necessity for administrative supervision of prostitution.* This supervision should include *medical examination* of all women convicted of professional prostitution, and *internment* of these women in case of contagious disease.

But I hold that this supervision should be carried out in a legal, humanitarian, and charitable manner—*legal,* by the substitution of law for arbitrary police discretion; *humanitarian,* by the substitution of simple and tolerant hospitalization for the old régime of the prison and the penitentiary; *charitable,* by giving moral help to the prostitute, and assistance in returning to a better life.

. . . . . .

And now, is it necessary for me to reply to the old and foolish argument, so many times repeated and as many times refuted, according to which the repressive measures which I have just mentioned constitute an attack against individual liberty?

At every moment in social life the liberty of each individual is limited or even suspended for the liberty of others, or for the general interest. The best example of the kind is military service, for which the liberty of the individual is sacrificed for three years in the interest of the country. It is the same general interest which creates the obligation for quarantine, for vaccination, and the obligations to which unhealthy industries are subject. Let us apply these principles to the special case with which we are dealing. Has a woman the right to immoralize the street? Has she the right to excite passers-by

by an act which may compromise their health? Let us hear what Professor Franck has to say on these two points:

"A woman may do what she likes with her own body, give it or sell it, but in secret. She has not the right to offer it in the streets, because then she infringes the right of passers-by to have their modesty respected. Again, if an infected prostitute communicates her disease, she commits an offense against the health of a fellow-creature; she commits a misdemeanor which should be prosecuted, especially as the germs of infection may attack innocence and virtue."

Why should not the industry of prostitution be classed with other unhealthy industries which come under the supervision of the authorities? The prostitute in the streets practices a trade, and it is unnecessary to say that this trade is unhealthy. Moreover, this opinion is now held by a number of jurists, sociologists, and philosophers—as, for example, by M. Duclaux in his book on social hygiene. The same opinion was held by the "League of Men's Rights," which, after a long and profound inquiry, decided the point in the following terms:

"Individual prostitution cannot in itself be considered as a misdemeanor, but it *should be classed among the unhealthy trades.* Under this head it can be submitted, like all unhealthy trades, to periodical supervision, destined to guarantee the interests of the community, the chief of which is the public health."

And, I may add, from the point of view of sentiment, is this woman worthy of pity who knows herself to be diseased and still continues to practice her profession? Fully cognizant of her condition, she distributes syphilis to the greatest possible number of passers-by. Why does not she go to the hospital, which is open to her gratuitously? She does not go there, either owing to indifference, or because she prefers to continue her life of immorality, or still more often (as I can affirm by having several times received the confession), because her employer will not allow her to interrupt the trade by which he lives! And this is said to be "respectable" in the name of individual liberty!

Let us by good sense, enlightened by clinical experience, confer on society the right—I might even say the obligation—to defend itself against the terrible plague of venereal affections, and this I repeat in the name of the sacred interests of the virtuous woman, the child, the family, and the country.

CHAPTER XLIII

A DOCTOR'S ADVICE TO YOUNG MEN OF EIGHTEEN

My friends, you have arrived at the age when you are no longer children, nor even adolescents. The dawn of another period announces itself by a number of signs, which are the appanages of approaching virility. In short, you are about to become men. This is a propitious moment to speak to you of certain things, which I have no doubt begin to occupy your minds, concerning which my experience may enlighten you on the dangers which I see for you on the horizon. I have been charged with this mission, and I will do my best to further your interests.

You know as well as I do that what chiefly characterizes the metamorphosis of the child into the man is the genital development, the arrival of what is called the sexual life. Organs hitherto rudimentary and torpid begin to develop; a new function is constituted; along with special appetences, desires hitherto unknown gradually awaken—in fact, from this moment the child has ceased to exist and the man is born.

This is your position, and I can now tell you what you would perhaps hesitate to confide to me—namely, that since the time when this transformation has been effected, a new preoccupation has taken possession of you. You are agitated by an aspiration; pure or impure, you are tempted by a desire. To speak plainly, woman has appeared on the scene.

Do not accuse yourselves or excuse yourselves on this account, for this is the great law of Nature which you can only obey.

Woman! What could I not say on such a subject if I were a moralist, a philosopher, or a religious instructor! But I am only a doctor, and my mission is only to speak to you in my capacity as a medical man.

What has medicine to do with such a subject? Alas! it has only too much, as you will see in a moment. From the desire for woman to the possession of woman is only one step, and it is only too easy to make it. But this step is not always made with impunity, and it is then for the doctor to succor the wounded and repair the damages as far as possible.

One word more before entering into our subject. In all which follows considerations of a medical nature will be dealt with exclusively. Not that I underestimate the value of moral and religious considerations—far from it; but I assume that these are already known to you by instruction which you have received elsewhere. Therefore I shall only speak as a medical man.

There is a group of diseases which are derived from sexual or venereal commerce, and known as *venereal diseases*. No doubt this is already familiar to you, as it forms a favorite topic of conversation among young men. But what you do not know are the real dangers of these diseases, their present and future consequences. It is of great importance that you should be instructed on this point, and instructed scientifically, for, being thoroughly enlightened on what is called the *venereal peril*, you will comprehend if it is necessary to protect yourselves against it.

You must not expect me to describe here these diseases *in extenso*, as I do to the medical students; I shall confine myself to tracing a sketch, and tell you as much of the subject as you ought to know. Moreover, I undertake to speak frankly, without the least exaggeration, and without in any way rendering the pictures which I shall present to you more gloomy than they actually are. I wish you to believe that it is not my object to raise a bogie before you; what follows will be the exact medical truth of the question.

The *venereal peril* is constituted by three morbid types—simple chancre, gonorrhœa, and syphilis, in order of their severity.

Simple Chancre.—This is the least common of the three, and also the most benign, in spite of a formidable complication—phagedena—which is fortunately only a rarity.

It consists of ulcerated lesions which are produced on the contaminated organ. These lesions are deeply cut suppurative sores, generally multiple, as wide as a ten-cent piece, but sometimes more extensive and even mutilating. Sometimes they are complicated by swelling of the glands in the groin (adenitis or bubo), and this swelling may become inflamed and form an abscess, and degenerate into a chancrous ulcer.

There is nothing serious in all this, except in rare cases, for the simple chancre is only a local affection, without infection of the blood, without poisoning the system, and consequently without harm for the future. In fact, if simple chancre was the only venereal affection, the venereal peril would not exist, or would only be a shadow compared to what it is with the addition of the two following types.

Gonorrhœa.—This consists essentially in a suppurative inflammation of the urethral canal, from which a greenish-yellow matter exudes, containing a microscopic organism called the *gonococcus,* which is the specific agent of the disease.

This is a disease which is extraordinarily frequent. The public usually regard it as a bagatelle, and remark that it is a complaint which every one has or will have, a complaint of no importance which is cured in a few weeks. Some look upon it as a mark of virility which may be laughed at. You will see by what follows whether it is a thing to be laughed at.

It is true that, when properly treated and free from complications, gonorrhœa is only a small affair, which is, as a rule, easily got rid of without any further trouble—not always, however, without prejudice. For example, I have many times seen it occur at the most unlucky times, and cause absence from an examination or competition and ruin a career.

It is also true that, even when negligently treated (which is the usual case), gonorrhœa is most often cured without actual complications, and without future consequences, except the long duration, which is reckoned, not by weeks, but by months or even years.

But things are not always as simple as this. In the first place, the affection may prove rebellious (either from the fault of the patient or the doctor), and may not dry up for a con-

siderable time. In the second place, it may often only dry up incompletely, and degenerate into that state of chronic discharge which is called *gleet,* or in common parlance the "morning drop," consisting only in a slight yellowish moisture which the patient discovers in the morning after passing several hours without making water. But it is necessary to bear in mind that this *gleet* is one of the most obstinate affections, and one of the most difficult to cure. It is only got rid of by prolonged and sometimes painful treatment, and it is liable to frequent recurrences, without mentioning cases where it becomes inexhaustible and refractory to all forms of treatment. In the third place, gonorrhœa is liable to two orders of severe accidents—namely, actual complications and future consequences.

The first are numerous and varied, but I shall only mention two, which are the most common and of the greatest clinical importance: (1) *Epididymitis* (commonly called orchitis or "clap descending to the testicles"), consisting in an acute painful inflammation of the epididymis, a small organ attached to the testicle; (2) *gonorrhœal rheumatism,* which is less common, and is constituted by a number of symptoms closely resembling common rheumatism.

Besides these, it is necessary for you to know that in more rare or exceptional cases gonorrhœa may react on various organs—for instance, on the bladder, on the prostate, in the form of congestion, inflammation, and abscess, which requires to be opened immediately to avoid worse dangers; on the kidney; on the eye, by inoculation carried there by the fingers soiled with pus, or in some other manner, an inoculation which causes an acute ophthalmia which may destroy the eye in a few days; on the heart; even on the spinal cord, causing paralysis of the lower limbs and the bladder; even on the brain.

Thus, owing to the fact that it attacks organs of the highest functional importance, and viscera which are essential to existence, this little disease which one is accustomed to limit to its narrow urethral domain enlarges its boundaries, modifies its nature, and is characterized by the severe symptoms of grave diseases, sometimes ending in death—yes, even in death, for it is possible to die of gonorrhœa. To cite one order of cases

only, out of eleven cases of acute inflammation of the spinal cord, caused by gonorrhœa, eight have been known to terminate fatally. From this we see that gonorrhœa is far from being "a mere trifle, a bagatelle to be laughed at"!

But the common dangers of gonorrhœa lie in what may be called its *remains*. Of these remains I will only mention the four principal ones:

1. *Gleet,* which commences, according to custom, by being neglected and "treated with contempt," and thus after a certain time becomes an inconvenience, a torment, an obsession, a bugbear, even in certain subjects a permanent cause of despair, melancholia, and neurasthenia.

Such a gleet is very grave from two points of view. On the one hand, it constitutes *an obstacle to marriage.* What honest man would dare to aspire to marriage when he is affected with a disease which may be contagious? On the other hand, *it may be the origin of the direst catastrophes in women.* Although you are young, you must have heard of unfortunate young women, who, a short time after being married in a condition of perfect health, have suddenly become ill with "abdominal complaints," who have languished on a couch for months or years, who have then as a last resource had the abdomen opened, and have finally been cured or killed by this extreme measure. What does all this mean? Simply that these women are the victims of masculine gleet. They have married husbands with gleet derived from gonorrhœa which has been neglected or badly treated, and has been the cause of the accidents in question. If one of these women was your sister, what would you think of the man who had contaminated her and exposed her to such danger?

Sometimes you will hear this: "What a terrible misfortune has happened to poor Mrs. X., who has herself suffered so much since her marriage! The child which she has just brought into the world has been affected from its birth with a severe ophthalmia which has left it blind or nearly blind."

What does this mean? Again the result of gonorrhœa—namely, a *gonorrhœal ophthalmia* caused by maternal gonorrhœa derived from gonorrhœa in the husband.

Once more—for the evidence is complete, and your conviction should now be established—I repeat the question: Is a complaint capable of causing such things one to be laughed at?

2. *Spermatic obstruction* is a second form of remains. This is due to double epididymitis which has obliterated the canals which convey the sperm, and constitutes temporary or permanent *infecundity*.

But infecundity not only means incapacity for reproduction; it also means the bitterness of decadence, humiliation, indefinite heart-break. It is also an obstacle to marriage, or if marriage takes place, it means eternal solitude for the domestic hearth, desolation of the nest, a home without children.

It may be mentioned by the way that husbands often accuse their wives of sterility for which they themselves are guilty!

3. *Joint Affections.*—These are the remains of gonorrhœal rheumatism, remains which are definite and permanent. The resulting functional troubles may be slight or serious, such as stiffness of the joints, abnormal attitudes, diminution and sometimes abolition of movements by ankylosis of the joints; in short, there is the possibility of permanent disablement. It is no exaggeration to say that gonorrhœa causes infirmities of the limbs, of the fingers, hands, feet, knees, shoulders, and spine. For example, two young men, the one a pianist and the other a professor of fencing, had to abandon their professions on account of distortion of the fingers in the one case, and incurable stiffness of the shoulder in the other case. A third patient was left powerless in all his limbs, and for twelve years has only been able to drag himself along by the aid of two sticks.

4. *Stricture of the Urethra.*—This is the most common and the most serious result of gonorrhœa, and is always of grave prognosis. Sometimes it is amenable to mild forms of treatment (by progressive dilatation), but it is often only cured by surgical intervention (urethrotomy). Further, a neglected stricture may become the point of origin of grave complications, affecting the prostate, bladder, and kidney. Then everything is possible, even death, which is not rare in such cases.

Such is the sum total of gonorrhœa.

From this short epitome we may draw the following conclusions:

1. That gonorrhœa constitutes only a mild affection in the great majority of cases, especially when it is submitted to early and proper treatment.

2. That it is not uncommon, however, for it to become a more or less serious affection by its tendency to become chronic, by its actual complications, and especially by its remains.

3. That in a few cases it becomes, either by itself or by its remains, a grave affection which is capable of all terminations.

This is summed up in the old aphorism: "We know when a gonorrhœa begins, but we know neither when nor how it will finish."

Syphilis.—I now come to syphilis, the most formidable of the venereal affections, which has been well described as the *modern plague*. In fact, by the heavy tribute of disease, suffering, misery, and death which it levies on humanity, it does not fall short of such a designation.

Syphilis is harmful and pernicious in four ways—namely, (1) by the *individual* damage which it inflicts on patients; (2) by the *collective* damage which affects the family; (3) by its *hereditary* consequences, one of which is the terrible infantile mortality caused by it; (4) lastly, by the *degeneration* which it causes in the species.

In spite of this, it is hardly recognized, and few measures are taken to avoid it. The result of this is that, in Paris, out of one hundred men, from thirteen to sixteen, at the lowest estimate, are affected with syphilis (Leloir); and under the present conditions it is probable that this proportion will go on increasing.

The first idea which I have to present to you is that of a disease which, arising from external contagion of probably microbic origin, creates an infectious impregnation, a kind of poisoning of the whole system. There is not one of our organs, nor a corner of our bodies, where it may not penetrate and cause certain manifestations. The whole body is its domain, from head to foot. It is hence *par excellence* a general disease.

It is also essentially a *chronic* disease. When it has once

taken possession of the organism, it remains in a state of patent or latent infection for an absolutely indefinite time, which is probably only limited by the term of life itself. Thus, it is a common thing for it to show signs five, ten, or fifteen years afterwards; it is not uncommon for it to show itself twenty or twenty-five years after its origin; it has even been manifested by undoubtedly specific lesions at later periods, up to forty, fifty, sixty, and sixty-seven years after the initial infection. For example, one of my patients was affected with an enormous syphilitic gumma of the thigh fifty-five years after contracting the disease.

But you must not imagine syphilis as a disease which gives rise to an uninterrupted series of morbid symptoms, after the manner of a volcano in a state of continuous eruption. On the contrary, to continue the comparison, it resembles more a volcano with intermittent eruptions, more or less separated from each other chronologically. In other words, it proceeds by morbid outbreaks separated by periods of quiescence.

Symptoms.—Let us now see what symptoms it produces.

Its long course has been divided naturally into three periods: (1) A *primary period,* or period of chancre, which lasts from six to seven weeks; (2) a *secondary period,* following soon after the first, lasting two or three years, and constituted by superficial and comparatively benign symptoms, which may disappear without leaving any trace; (3) a *tertiary period,* of uncertain appearance and duration, consisting in deep destructive lesions, always grave, sometimes very grave and even fatal.

Let us consider these periods in further detail.

1. The primary period is, so to speak, insignificant, and consists only in a small sore, called the *chancre,* with some affected glands in its neighborhood.

The chancre is produced at the spot where contagion is effected. It generally remains superficial, and heals rapidly, so that it is often regarded by patients as a simple pimple or an insignificant excoriation, and sometimes even is not noticed.

I may mention by the way as a useful warning that this benignity of the chancre is peculiarly insidious, and often becomes a cause of error. A small erosion of the penis of

benign and insignificant appearance does not cause anxiety, but by very reason of this reassuring benignity there is a chance that it is a chancre. This is a point to be remembered.

2. Six or seven weeks after the appearance of the chancre the infection begins to show its diffusion in the system by eruptions on the skin and mucous membrane. This is the inauguration of the secondary period, which, in the absence of treatment, may continue by a series of the most diverse affections, which appear on the scene in the form of outbreaks alternating, with periods of quiescence, for a period of two or three years. Briefly, these affections consist in the following:

Skin eruptions; eruptions on the mucous membrane, especially in the mouth and throat, and on the genital organs, in the form of erosions or ulcerations called mucous patches; headache; neuralgic pains, and pains in the bones, joints, and muscles! swelling of the glands; temporary loss of hair; ophthalmia; nervous disorders, etc.

In all this, however, there is nothing grave—at any rate, as a rule. These are all symptoms which are nothing more than inconvenient, sometimes painful, and especially disfiguring—as, for example, the well-known "crown of Venus," which adorns the forehead with its revelatory eruption. But they are all affections which are curable, and even capable of spontaneous disappearance without leaving after effects. In its secondary stage, syphilis is only serious in a small group of cases where it assumes a tertiary character—cases of what is called early maglignant syphilis.

It has, therefore, been well said that "the danger of secondary syphilis is especially a danger for others." Why for others? Because the dangers of the disease at this period are especially those of *contagion*. In fact, it is at this period that the redoubtable *mucous patch* appears which is the most fertile source of syphilitic contamination. It is an actual fact that the mucous patch causes more contagions than all the other syphilitic lesions put together. By itself it is a trifle; by its contagiousness it is a plague.

Therefore, if syphilis always remained in its secondary stage, it would not be a disease of very great importance. But it

assumes a very different character in its third stage, which now remains for us to consider.

3. This stage, or the state of *tertiarism,* is not inevitable. It is only inevitable in subjects who have been insufficiently treated, while, fortunately, it is absent in the majority of cases which have been submitted to prolonged and methodical treatment.

It is at this period that occur all the severe lesions which have given the disease its evil reputation. Without possible contradiction, all these lesions are grave in different degrees; all are disorganizing and destructive. They consist in infiltrations, deposits, and swellings in the various organs of the body, and these infiltrations, if not absorbed and cured by treatment, have only two modes of termination, which are called in technical language gummatous softening and sclerosis. Gummatous softening is *local death* of the tissues, with ulceration, gangrene, decay, and mutilation; sclerosis is *functional death* of the organ, which survives only in a degenerate condition, deprived of its former attributes.

Moreover, what renders tertiary syphilis so formidable is its singular faculty of *ubiquity.* Without any exaggeration, it is, or may be, everywhere. There is not a single organ which it may not attack, and I assure you that it abuses this liberty. In order to convince you on this important point, and to give you a precise idea of what the disease may do, I will show you medical documentary evidence which is irrefutable, since it is based on facts of observation. This is a list of the tertiary lesions, showing the relative proportion in which the different organs of the body are attacked, based on four thousand seven hundred patients affected with tertiary syphilis.

	Cases
Affections of the skin (tertiary syphilides)	1,518
Subcutaneous gummatous tumors	220
Tertiary lesions of the genital organs	285
" " " tongue	277
" " " palate	218
" " " throat and pharynx	118
" " " lips	45
" " " tonsils	12

	Cases
Tertiary lesions of the nasal mucous membrane. .	10
" " " bones.	556
Bony lesions of the nose and hard palate.	241
Tertiary lesions of the joints.	22
" " " muscles.	23
" " " digestive tube.	22
" " " larynx and trachea.	36
" " " lung.	23
" " " heart.	12
" " " aorta.	14
" " " liver.	11
" " " kidney.	39
" " " testicle.	255
" " " eye.	111
" " " ear.	28
" " " arteries and veins.	17
Syphilis of the brain and spinal cord, locomotor ataxy, general paralysis, etc.	2,009
Sundry localizations.	22

I recommend this table to your notice. Read it, and read it again, for it is instructive. It shows with mathematical precision three points which are characteristic of the disease.

In the first place, it emphasizes the gravity of tertiarism by showing us that it is composed of a multitude of affections which concern the most important organs and systems, such as the nervous system, the bones, the heart and blood vessels, the palate, tongue, lung, larynx, liver, eye, ear, testicle, etc.

In the second place, it implies that a correlative diversity of morbid forms should correspond to such a multiplicity of localizations. As a matter of fact, this actually occurs, and it is most singular to see the varied ways in which tertiarism manifests itself, having nothing in common between one case and another—for example, in the form of a sore, tumor, aneurysm, exostosis, white swelling, or stricture of the rectum, etc. In one patient tertiary syphilis will assume the form of pulmonary phthisis; in another that of an affection of the liver or kidney; in a third that of epilepsy or softening of the brain, and so on.

Lastly, the same table shows that tertiary syphilis does not affect all the organs and systems with the same frequency, but has its preferences or seats of election. Thus, it affects with greater relative frequency the skin; the bones, especially the tibia, which has been called "the bone loved by syphilis"; the nose, which it so often mutilates or destroys; the tongue, especially in smokers; the palate, perforation and destruction of which are common; the testicle; the penis; the muscles of the eye, etc.; and, above all (mark this fact well, for you will soon see the evil consequences of it), the *nervous system*—two thousand and nine cases in four thousand seven hundred patients!

If you add the different nervous manifestations which appear in the preceding statistics, you will obtain the prodigious total of two thousand and nine cases, a greater total than that of any other localization of tertiary syphilis. This means that *the nervous system is the victim par excellence of tertiary syphilis*, and that the active principle of syphilis, which is a poison for the whole system, is especially a poison for the nervous system.

But, considering the importance of the functions performed by this system, which it is hardly necessary to tell you is essentially the chief organic system, and the director of the whole human machine, it is easy to see how this affects the prognosis of syphilis. This means that from syphilis are derived, in a considerable proportion of cases, those formidable symptoms which, as every one knows, constitute the common expression of cerebral or spinal affections—namely, paralysis in all situations, partial paralysis, hemiplegia, paraplegia, ocular paralysis, paralysis of the bladder and rectum, disorders of sensation, intellectual disorders, such as delirium, hebetude, insanity, dementia, etc., all kinds of infirmities and degenerations, which are often terminated by death. Yes, by *death;* and it is necessary for me to produce some figures to convince you of the extreme gravity of these localizations of syphilis to the nervous system.

After an analysis of several hundreds of cases of syphilis of the brain which have come before my observation, I have

obtained the following figures showing the termination of the disease: Out of one hundred cases, twenty-two were cured, nineteen died, and fifty-nine survived with permanent infirmities, consisting in paralysis or mental breakdown. In other words, twenty-two cases were favorable and seventy-eight unfavorable in different degrees, and out of these seventy-eight cases nineteen died. This is a gloomy result, is it not?

And this is not all, for syphilis not only causes syphilis; it causes *parasyphilis,* which is worse. I will explain.

A celebrated physician once said: "Syphilis is a dung-heap on which all kinds of rottenness will grow." This saying contains a good deal of truth, for there is a group of diseases which graft themselves on syphilis like parasites on an old tree-trunk, and which are the result of syphilis without being syphilitic in nature. But, unfortunately, these epigenetic affections, grafted on syphilis, and for this reason called *parasyphilitic,* are nearly all very grave, both as regards their symptoms and termination. I will mention three as specimens.

General paralysis, the name of which alone is a bugbear, and which always ends fatally; *tabes* or *locomotor ataxy,* which leads to motor and sensory infirmities (blindness, for instance), and is equally incurable; *leucoplasia,* which, generally caused by syphilis and the irritation of the mouth by tobacco, very often degenerates into *cancer of the tongue,* a terrible disease which is inevitably fatal in a brief space of time.

Owing to its frequent situation in the viscera, which are essential to life, it is obvious that syphilis causes many risks of death. People die of it more often than is generally believed, and especially more often than is mentioned. People die of it by the brain most often, but it may also cause death by the spinal cord, by the kidney, by the liver, by the larynx, by the lung, by the heart, by the arteries (it has been known for some years that aneurysms of the aorta are in the great majority of cases of syphilitic origin), sometimes also by chronic general disorders and progressive cachexia, occasionally in an acute manner by startling malignancy, as in the following case, which I will relate in a few words: A handsome young girl allowed herself to be seduced by a young man, who contaminated her

with syphilis. She concealed the fact from her family, and was not treated. Three months later she was literally riddled from head to foot with enormous ulcers, which, without any exaggeration, destroyed at least two-thirds of the skin. She lingered on for several weeks, and then died of cachexia in a terrible condition, the horror of which was not equalled by leprosy itself.

From the preceding remarks it is unnecessary to add that a disease which includes so many and such terrible symptoms should be classed among the gravest of diseases. In fact, syphilis is a veritable *plague* for humanity.

You will tell me that there are remedies against syphilis, and that it can be cured. Certainly, I reply; and if it were not so syphilis would be the most abominable of all diseases. It is true that we have two antidotes for syphilis—mercury and iodide of potassium—remedies which are not only active, but incomparable and marvelous, which daily give prodigious results, unexpected cures, sometimes even cures *in extremis*, or quasi-resurrections.

But, however marvelous they may be, these two remedies are not omnipotent. Like all other therapeutic agents, they have their failures and their refractory cases—in fact, they do not always succeed. Again, it is essential that they should be administered at the proper time and in sufficient doses, etc. Lastly, although having a powerful action against syphilis proper, mercury and iodide almost completely lose their power against the terrible sequel, *parasyphilis*, of which I have just spoken.

So much for the individual dangers of syphilis. We now come to the mischief which it causes in the family, in children, and in the species.

Family Dangers.—With regard to the family, syphilis constitutes a threefold social danger as follows:

1. Contamination of the wife. This is frequent, and it is shown by statistics that out of one hundred syphilitic women in private practice, there are nineteen who have been infected *conjugally;* that is to say, about one in five—a terrible proportion.

2. Disunion, dissolution of marriage, separation, and divorce are the natural consequences of the injury to the wife caused by the husband.

3. Material ruin of the family, owing to the illness, incapacity, or death of the husband; for, by reason of its delayed appearance, syphilis often does not present its bill to be paid, if I may use the expression, till at a time when the young man of former days is transformed into a husband and the father of a family. Therefore, it is generally a husband who pays the bachelor's debt. Also, it is the family which suffers for the sins of the husband when he becomes infirm or dies; for, deprived of its natural support, it only too often runs the risk of falling into a state of misery and distress. How often have I witnessed tragedies of this kind as the consequences of syphilis! Out of many, I will quote the following:

A young artist, with much talent and good prospects, married in spite of syphilis which was insufficiently treated. All went well for several years; his pictures sold, his affairs prospered, and a child was born. Then the husband was afflicted with double syphilitic ophthalmia, which ended in complete blindness. As the result of this, the family was ruined and forced to appeal to charity.

Hereditary Consequences.—If I were asked, as an old practitioner, What is the worst result of syphilis? I should have no hesitation in replying that it is the *hereditary effect,* which manifests itself by causing hecatombs of infants, without any exaggeration.

Syphilis, in fact, has a very murderous effect on children. It kills them either before birth or during the first days or weeks of life, or at a more advanced age. In some families it often produces a whole series of abortions or dead infants, to the number of four, six, eight, or ten, and even more (up to nineteen have been counted). This *infantile polymortality,* as it is called, constitutes medically an important sign for the diagnosis of hereditary syphilis. In many cases it ends in depopulating the domestic hearth.

Consequences for the Race.—Lastly, it is shown by recent researches that syphilis may, by its hereditary consequences,

constitute a cause of degeneration of the race by giving birth to inferior, decadent, dystrophic, degenerate beings.

These may be *physically* degenerate—small, wizened, infantile or valetudinarian at birth, afterwards becoming rickety, deformed, and hunchbacked; or born with various dystrophies, which are only the consequences of arrested development—hare-lip, flat-foot, malformations of the skull or limbs, deaf-mutism, testicular infantilism, etc. Or they may be *mentally* degenerate, constituting backward children, feeble-minded, imbeciles, or idiots, according to the degree of intellectual abasement. It is undeniable that the intensity of degeneration may even reach the point of monstrosity. Syphilis may thus give rise to monsters by leading to extreme malformation or complete arrest of development. This is the acme of degeneration. For example, syphilis may give rise to dwarfs. Thus, the celebrated Bébé, the dwarf of the King of Polonia, was certainly a dystrophic heredo-syphilitic, as shown by the lesions found in his skull.

But I will stop, for I have said enough to enlighten you on the subject of syphilis and to convince you that it is a *plague for humanity.*

My friends, it is not every one who will talk to you as I have done, and what I most fear, from the point of view which concerns us, are the numerous prejudices scattered broadcast by ignorant persons and fools. For instance, you will often hear something like this: "The makers of morals, the anxious papas, and the doctors would hinder us from going the pace, with their bogie of syphilis and venereal affections. If one must not ride a horse for fear of falling off, and must not hunt for fear of getting shot, and must renounce women for fear of suffering from some mishap, one might as well be shut up in a cloister. We have only one good time down here—that is youth—and we must enjoy ourselves when we are young. After all, one does not die of syphilis; a little mercury, and all is over. I know Messrs. A., B., and C., who have had syphilis, but they are none the worse for it."

To this I reply, in the name of common-sense and scientific truth: In order to enjoy oneself while young it is not neces-

sary to run the risk of contracting syphilis. Syphilis is not a "mishap," but a great calamity. It is not cured by "a little mercury," and one may consider oneself very lucky to render it quiescent with a great deal of mercury. Lastly, if Messrs. A., B., and C. have had it and are "none the worse for it," it is because they have been properly treated for a long time, or, if not, let them beware of the future!

Another prejudice is that which regards the grave effects of syphilis as the result, not of a single infection, but of an accumulation of affections from a long course of debauchery. Thus, when an unfortunate syphilitic becomes affected by general paralysis or softening of the brain, one often hears that he must have been both excessive and unfortunate in his love affairs to have arrived at such a condition. This is erroneous, and it is essential to know that syphilis with all its consequences is derived not from repeated contagions, but from *one contagion only*. Syphilis does not repeat itself, and is not cumulative—in fact, it constitutes an immunity to itself. Hence, a patient such as the one in question, having reached the last stage of cerebral decay, may perhaps expiate in this way, even with his life, a single moment of forgetfulness. In proof of this, I will cite the following case from personal observation:

A young student, on the day of obtaining his degree, celebrated the occasion in one of the brothels which infest the Latin quarter. He contracted gonorrhœa and syphilis at the same time. As is usually the case, he said nothing about it to his family, and was treated by one of his friends, a medical student. As soon as the visible signs had disappeared he thought himself cured, and discontinued the treatment. Three years later he was suddenly attacked by epileptic attacks, the nature of which was misunderstood owing to ignorance of his former complaint. In short, he developed syphilis of the brain, which, being properly treated too late in the day, carried him off in five months.

But this young man was not a "veteran in debauchery"—far from it—for he made his *amorous début* on the day when he contracted the disease which killed him. Young men, bear this well in mind: that in the case of syphilis a single unfortunate contact is sufficient to cause infection with all its future

consequences, even the most disastrous, as you have just seen.

Such is the *venereal peril,* composed principally of two diseases, both serious, but of unequal severity, as is shown in the above exposition.

Now you can understand why your arrival at the stage of virility may give rise to some anxiety in the minds of your parents. You can also understand why a society, the object of which is to study the proper measures for diminishing the frequency of venereal affections, has thought of you young men first of all, and has done me the honor of confiding to me the drawing up of this instruction for the ignorant in these special matters. First of all, say my colleagues, let us safeguard the inexperienced—those who may fall into the abyss because they do not know of its presence. Let us warn our children of the venereal peril, for this will be the surest means of preserving them from it. Let us not confine ourselves to a general warning, but describe to them this peril in its medical aspect, so that they can judge for themselves to what they may expose themselves. It is for this reason that, instead of only telling you to beware, I have spoken to you as if you were students at my hospital. You now know as much as you require to know about the diseases in question, and I shall be very gratified if what I have told you concerning them will prove of personal utility.

A few words more before I conclude. It is young men such as you that feminine solicitation regards as an easy prey. But this solicitation, you must know, goes on everywhere under different forms. You will meet it not only at night, at the corners of the streets, but also in the daytime, in the form of elegant promenaders on the boulevards, in the form of pseudo-workgirls pretending to go to their work; or in the wine shops, at the play, in the theater promenades, at public balls, cafés and café concerts; at certain shops for gloves, perfumes, or "curiosities," the back premises of which are used for quite a different purpose; as well as in all the brothels which under various designations swarm in our city. Solicitation may even reach you at home, in the form of letters, as happened to one of my young patients, a student of Condorcet, who received a

letter of this kind from an unknown woman who had taken notice of him, and who requested an appointment. Imprudently, he accepted the invitation, and paid dearly for his folly.

But, mark this well, for it is an important warning, the solicitation of which I have just been speaking emanates almost invariably from the worst kind of prostitutes—namely, those who in administrative language are called clandestine or *unregistered,* because they have so far escaped the hygienic control of the police. These are the most dangerous of all, because they are not under medical supervision, and consequently not withdrawn from circulation when they are affected with venereal disease. They are dangerous in a numerical proportion which is astonishing. It has been shown by several official statistics that, out of one hundred of these women arrested for prostitution, about a third of them (twenty-five to forty-eight per cent.) are always found to be affected with gonorrhœa, soft chancre, or syphilis, or with several of these diseases at the same time. Therefore, out of three adventures with this class of women, one will almost inevitably be followed by contamination.

But you must not conclude from this that, since prostitutes who are not supervised are dangerous, those who are supervised are not dangerous, for the first of these propositions does not in any way imply the second. It is true that supervised prostitution is much less dangerous than clandestine prostitution, because it is medically examined every week, and sequestrated in cases where it is found to be diseased or even suspected of disease. But between one of these examinations and the next one there is an interval of a week, during which time there may develop a gonorrhœa, or a chancre, or a recurrent mucous patch. Consequently, a woman who is found healthy to-day may be contagious to-morrow. Moreover, you must remember that every woman after two or three years of prostitution is almost inevitably affected with syphilis.

And is this all, you will ask, that has so far been done to preserve the population from the two plagues that I have just described? Alas! yes, this is all. But we hygienists and doctors cannot be accused of having done nothing better for

the protection of the public health, for we have struggled for a long time for reforms, but our advice has hardly been listened to by the powers that be. Public opinion is still urged to abolish all medical supervision of prostitution by a powerful society called the Abolitionist Federation, which, created in prudish England by Protestant mysticism, regards syphilis and venereal diseases as the beneficial gifts of Providence to "scourge the luxurious flesh," to put a bridle on immorality, and to assure the safety of souls in another world. Let us depend upon French common-sense to resist such doctrines, the result of which would be to increase the venereal peril tenfold.

The natural and necessary conclusion of all that precedes is that the best of all preventive measures must be individual and personal prevention—namely, that which every one can and should exercise on himself. Let us commence by protecting ourselves; this will be far more sure than depending for our safety on the vigilance of others.

It has been facetiously remarked that "the fear of syphilis is the beginning of wisdom," but one does not attain wisdom only by fear; one attains it by other sentiments of a higher order—by the principles of morality and religion, by self-respect and respect for women, and, I may add, by respect in advance for your future wife, your children, and your domestic hearth.

Another point that has been unduly spoken of is the "danger of continence for young men." I confess that, if these dangers exist, I am not acquainted with them, and have not yet discovered them, although subjects for observation in such matters have not been wanting.

Moreover, I may add, in the name of physiology, that true virility is not attained before the age of about twenty-one years, and that sexual desire is not obtrusive before this age, unless it has been prematurely awakened by unhealthy stimulation. Sexual precocity is only artificial, and is generally due to ill-regulated education. In any case, there is much less danger in continence than in anticipating the laws of Nature.

A last word of advice, and I have finished. If, one day, the impulse of passion should overcome your will, and some mis-

fortune should result, what should you do? Here again my experience authorizes me to say that, of the two courses between which you would hesitate, one is good and the other bad.

The bad course is that of silence and dissimulation. Nevertheless, it is in my experience the one to which most young men give the preference. Dismayed and frightened, they hide their complaint, say nothing to their family, and treat themselves secretly, trusting in the first comer, a comrade, a doctor whom they know nothing about, or most often a charlatan. Some do this owing to a sentiment which may be honorable, but is none the less unreasonable. They look upon syphilis as a shameful disease which is condemned by Nature to remain secret; as if syphilis was a disgrace, and not a misfortune for which one can only have compassion and pardon.

What is the result of this secret system? The result is that these young men are insufficiently and incompletely treated, and remain exposed in the future to the catastrophes which you know. Recollect, as a case in point, the history of the young student of whom I spoke a short time ago.

On the contrary, the proper course to pursue is that of *confession,* for precisely the opposite reasons to those which I have just mentioned. Therefore, under such circumstances, do not hesitate, whatever it costs you, to summon courage to confess. Confide your misfortune to your family, who will guide your inexperience, who will choose for you a competent doctor, and give you every facility to carry out the treatment which may get rid of the complaint. I repeat, that in such a situation, and especially at your age, confession is a duty which you ought not to shun.

APPENDIX

By GEORGE M. MacKEE, M.D.,

Instructor of Dermatology at the New York University and Bellevue Hospital Medical College

THE TREATMENT OF SYPHILIS

All attempts to abort syphilis in the primary stage, or to prevent constitutional infection of the individual after the appearance of the chancre, have been unsuccessful. In recent experiments upon the apes the site of inoculation was excised within eight hours, but systemic manifestations followed. Subcutaneous injections of mercury from the time of inoculation also failed to abort the disease. (Neisser, *Deutsche Med. Woch.*, Jan. 11 and 18, 1906.) The efforts of Neisser, Metchnikoff, Roux and others to produce a useful vaccine, immunizing or curative serum, as will be seen later, have been attended with very little success. On the other hand Metchnikoff (*Medizinesche Klinik,* No. 15, 1906) has been able to prevent the development of a chancre by the application of blue ointment within one hour after inoculation, and he therefore recommends the liberal use of mercurial salves immediately after suspicious intercourse, the penis being thoroughly rubbed for five minutes with the salve.

Regarding the treatment of the disease by the time-honored mercury there is a diversity of methods to be considered. As will be seen by a perusal of the preceding pages, Fournier, after reviewing the various methods of mercurial administration, sums up by advising his chronic intermittent treatment as the methodical management of the disease with modifications to suit individual cases. Fournier's teachings are largely followed in France and, to a greater or less extent, in other countries, including America. In Germany mercurial inunctions and injections appear to be the methods of election, while in this country the alimentary canal has probably been the favorite route, although inunctions have been largely employed in certain quarters and recently the administration of the drug by deep muscular injection has received much favor as a routine

measure, especially among the younger men. As a routine method of treatment the majority of American practitioners advise inunctions or a protosalt, a marked preference being shown for the protoiodide, during the first year of the disease, and a persalt combined with iodide of potassium (mixed treatment) in the second year. In the past and even to-day the majority of general practitioners give the drug steadily through the entire course, but of late there has been a tendency to favor the intermittent method. Of course, there can be no absolute routine treatment for this disease, but in a general way methodical methods of procedure, differing in essential details, have been advanced by various eminent syphilographers, and before deciding upon any routine measure the physician should become familiar with the writings of these specialists.

In the first place, the mercurial treatment of syphilis may be roughly divided into the continuous, expectant and the intermittent. Fortunately, the expectant method, which consists of treatment during active manifestations only, has not been accepted to any extent in America. The mode of administration of the drug may be divided into the ingestive mode (alimentary canal), the endermic mode (inunction, fumigation and bath), and the hypodermic mode (deep muscular and intravenous injections). Of these modes the fumigations, baths and intravenous injections have received very little recognition in this country. The various methods of treatment as employed in America will be well represented by the following abstracts: R. W. Taylor ("Genito-Urinary and Venereal Diseases," 1900), has for many years followed an intermittent, ingestive and endermic method of procedure as a routine treatment. In a general way the method is similar to that advised by Fournier. Constitutional treatment is delayed until positive secondary symptoms occur, then mercury is given steadily if possible for six months. Although inunctions are preferred, both on account of the beneficial action of this method and the saving of the stomach, they are not advised at first because the patients are more likely to object to such treatment at the start than after a few weeks. The protoiodide, which appears to be the least irritating of the mercurial salts, and which

seems to have a very efficacious action upon the early syphilides, is therefore given in relatively large doses (from three-fourths to two grains daily) for about one month. If this salt should prove too irritating other salts may be tried, especially the tanate, or better still, the inunctions may be begun at once. After a month of the protoiodide pills, the inunctions are to be commenced if possible and continued without interruption for five months, making a total of six months of mercury for the initial period of treatment. This first course should be as energetic as possible because the patient at this time presents a virgin soil, as it were, for the action of mercury, but at the same time care must be taken not to overtreat. If the condition of the patient is satisfactory at this time, as shown by an absence of all lesions, a month's cessation of treatment should be granted for the purpose of breaking up the systemic toleration for the drug and also for the moral effect. On resumption of the treatment preference is given to a systematic inunction course. In cases, however, in which this is impracticable, or for any reason contra-indicated, the following prescription is employed:

℞ Hydrarg. biniodidi. . . . gr. 2–4;
Potassii iodidi. . . . . gr. 30;
Tr. cinchonae Comp. . . ʒ 3½;
Aqua. . . . . ʒ ½.

The iodide is added to dissolve the biniodide, and not for its physiological action. This second course is continued until the end of the first year, when, if there have been no complications, the patient is well on his way to recovery. After another period of rest of about one month, the following mixed treatment is employed:

℞ Hydrarg. biniodidi. . . . . Gr. 1–2–3;
Potassii iodidi. . . . . ʒ ½–1½;
Tr. cinchonae Comp . . . . . ʒ 2½;
Aqua. . . . . ʒ ½.

Sig. Dram 1, T. I. D., one hour after eating, well diluted.

This treatment is continued throughout the second year of the disease, each period of dosage lasting two or three months with four to six weeks intervals. If there have been no active mani-

festations for many months the patient can now be presumed to be cured. It is to be understood that the above description is methodical, and can only be employed in uncomplicated cases. Often it is advisable to use inunctions at various times during, or throughout, the entire two years. In malignant or rebellious cases it is frequently necessary to utilize the hypodermic method for a time, preference being given to the soluble salts. Also in precocious cases it is not infrequently advisable to administer the iodide of potash in the first year of the disease. As an adjuvant to the treatment of syphilis the fluid extract of coca is considered a valuable agent. Preparations of iron, arsenic and other tonics combined with the customary hygiene are often essential.

As an advocate of the continuous ingestive method of treatment of the disease may be mentioned H. G. Piffard ("Cutaneous and Venereal Memoranda," by H. G. Piffard and G. H. Fox; W. Wood & Co., 1877). Piffard has treated syphilis by this method for over thirty years, and finds no reason to change the routine at the present time. Treatment is begun in the primary stage if the chancre and adenopathy are typical, otherwise it is delayed until secondaries appear. The proto-iodide of mercury in divided doses, not exceeding one grain daily is given without interruption for eighteen months. At the end of this time if the patient has had no specific symptoms other than those for which he first came under observation, or if he has been for a considerable time without syphilitic manifestations, all medication is abandoned. Potassium iodide is never given as a routine measure; only when especially indicated, as in precocious syphilis and in the tertiary lesions. This simple methodical treatment is of service in the average case. Occasionally a case is met with where for obvious reasons the continued use of mercury is impracticable. As a rule this is either due to too large doses at the start or to negligence on the part of the patient. In cases where the stomach and intestines fail to tolerate the drug the dosage is diminished, or it is combined with sedatives such as opium, or, still better, ipecac, lactucarii, etc., or a different salt may be tried. In case of salivation the treatment is temporarily abandoned, sulphur in

small doses administered, and in addition, the mouth should be frequently rinsed with solutions of potassium chlorate and tincture of myrrh; belladonna is also sometimes given. Usually, considerable skirmishing is necessary to regulate the dose for a particular individual, but the effort should be to give as large amounts of mercury as can be borne without injury to the patient and to continue this dosage for eighteen months without interruption. In cases associated with extensive mouth lesions triturations should be employed, as the finely divided particles come in contact with the abraded surfaces and exert a beneficial influence. In the case of patients coming under observation for the first time and presenting severe late secondary or tertiary lesions (affections of the periostium, bones, extensive ulcerations, gummata and affections of the nervous system, or cases accompanied with severe headaches, bone pains, etc.), iodide of potassium in doses of from ten to fifteen grains, or higher if necessary, alone or combined with a persalt of mercury, usually the bichloride in doses of from one thirty-second to one-twelfth of a grain is given three times daily. The iodide, however, is only administered until the lesions have resolved, while the mercury should be continued for a number of months. This is done because the mercury is considered to be the curative and preventive agent, while the iodide, although resolving some lesions and overcoming certain manifestations with wonderful rapidity, does not eradicate their cause. The persalts of mercury are always employed in the late stages, and the protosalts in the earlier stages of the disease. In cases where the alimentary canal is particularly irritable, or where it is necessary to obtain a very rapid effect, injections may be employed. Inunctions are seldom used, on account of the repugnance and the difficulty of persuading patients to take them. In affections of the hard palate, the chlorides of gold or of gold and sodium, in doses of one sixty-fourth of a grain, appear to possess specific and directly curative powers. Large doses may produce disturbances of the stomach and aggravate the local lesions. Although acting remarkably well upon lesions as above described, these salts do not appear to benefit other manifestations of syphilis.

As an enthusiastic endorsement of the efficacy of hypodermic injections as a routine treatment may be mentioned the work of W. S. Gottheil (*International Clinics,* Vol. 3, 14th series; also *New York Medical Journal,* June 30, 1906). He institutes treatment as soon as the first positive secondary symptoms occur. The salicylate of mercury suspended in liquid alboline (1 to 10) is the preferred salt, because it appears quite as efficacious as any other insoluble preparation, and at the same time causes fewer untoward results. Occasionally where it is advisable to bring the patient under the immediate effect of the drug, the soluble salts are employed, a preference being shown for the bichloride. The amount of salicylate injected at one time as well as the frequency of the procedure varies, of course, with the age and size of the patient and the systemic necessities of the case. From three to ten drops (0.2 to 0.6 c.c.) is the usual dose, thus making from three-tenths to one grain of the salicylate the usual amount. Young and small people, and those showing mild symptoms or none at all, receive the smaller doses; older and larger individuals and those presenting obstinate or serious lesions get the larger doses. Dosage must be regulated in accordance with these factors as well as with the specific symptoms and degree of mercurial saturation. No hard and fast rule regarding the regulation of the injection course can be laid down, but the usual routine is as follows: From ten to fifteen injections are administered at intervals of two weeks and then a non-mercurial period of from four to six weeks is allowed. A second similar course is then instituted, to be followed by a similar interval of rest. This usually constitutes the first year of treatment. Two or three courses in the second, and one or two in the third year, should effect a cure in uncomplicated cases. Gottheil has employed this method for a number of years and is convinced that it is the best procedure for the treatment of any stage of syphilis, or as a methodical system of controlling the disease. He has experimented with all the soluble and insoluble salts, and finds that the salicylate is by far the best preparation for routine treatment. By a careful technic he has been able to entirely exclude all the untoward results reported by other writers.

When Should Antisyphilitic Treatment be Instituted, and How Long Should it be Continued?

To the first question there can be but one answer. Active treatment should be begun as soon as a positive diagnosis is made, for reasons clearly shown by Fournier. But how early in the disease can one make a positive diagnosis? This question unfortunately is not so easily answered. The majority of writers, although advising extreme caution, consider it possible to declare a diagnosis in the primary stage of the disease. Other equally eminent syphilographers aver that innocent sores may so closely simulate a typical chancre and vice versa, that a diagnosis should never be made until the appearance of secondary symptoms. The writer can recall several patients who presented typical chancres with the proper incubation period and accompanied with inguinal adenopathy. Notwithstanding the fact that mercury was not administered, secondary manifestations failed to develop at the time, and there has been no evidence of the disease during the four years in which these cases have been under observation. On the other hand, it is quite possible that at times the secondaries may not only be so insignificant as to be overlooked, but may actually fail to appear at all, and yet the disease may be present. Four cases of this kind were reported by the writer in the *Medical Record* of April 6, 1907, one of which was under daily observation for a period of four months. All these cases presented late secondary or tertiary lesions at a later date. In this connection the observations of R. W. Taylor should receive careful consideration. In the *American Journal of Surgery,* November, 1906, he reported a number of patients who presented typical primary lesions, but although he has had these cases under observation for a number of years, he has never been able to demonstrate any evidence of syphilis. He therefore concludes that there is a possibility of the spontaneous abortion of the disease in the primary stage. One case was of particular interest in that spirochætæ pallidæ were found to be present by Fanoni.

Of course a positive diagnosis can usually be advanced when the secondaries appear, but even at this time considerable care must be taken as other dermatological conditions may so closely resemble the macular and papular eruptions of secondary syphilis as to cause an error in diagnosis. Prominent among these confusing factors may be mentioned the disease known as pityriasis rosea, which has not infrequently been mistaken for a syphilitic eruption as has been shown by Wise (*Medical Record*, May 11, 1907). In the *Medical Record* of July 20, 1901, Fordyce in an excellent article considers the question of differential diagnosis, and mentions several eruptions which may give rise to confusion.

The demonstration of pallidæ in the early syphilitic lesions certainly add considerable strength to the diagnosis, and if found in large numbers by an experienced pathologist the evidence is probably positive. It is unfortunate that this organism must be recognized by morphological features alone, for unskilled workers are likely to mistake other delicate spiral organisms for it. In an article in the *New York Medical Journal* of April 20, 1907, Lapowski states that the pallida has been found to be associated with syphilis, but until it can be proved to be the cause of the disease no importance can be placed upon it. As will be shown in the following pages the organism of Shaudinn and Hoffmann is not only associated with syphilis, but its peculiar relation to specific lesions is so suggestive as to cause a majority of the most prominent investigators to express confidence in the belief that it is the etiological factor. Of course there are many workers who will never be convinced that the pallida is the cause of the disease until the organism has been extensively cultivated artificially. It certainly will be difficult to prove beyond all doubt that the spirochæta pallida is the causative agent until it is successfully cultivated, and until such time one may not be beyond criticism if the diagnosis is based entirely upon the demonstration of these organisms.

The serum reaction of Neisser, Wasserman and Bruck, although very promising, is too complicated for routine employment. It will be seen therefore that the recognition of early

syphilis is not always an easy task. The physician may consider the features of a given case, either in the primary or secondary period, as positively diagnostic, but he must be willing to accept the grave responsibility of a diagnosis before specific treatment is instituted. It is a serious matter to condemn a patient to two or more years of antisyphilitic treatment, to say nothing of a life of mental misery without positively knowing the disease to be present. Physicians who do not begin treatment until the onset of the first signs of secondary syphilis are able to show quite as good end-results as when the medication is begun in the primary period. Again, the appearance of the secondary rash has a desirable moral effect upon the patient, and he is more likely to believe and understand the instructions of his medical advisor. Not infrequently when treatment is instituted in the primary stage of the disease and secondary manifestations fail to appear, there develops a deplorable feeling of doubt, not only in the mind of the patient, but in the mind of the physician as well. Although the secondaries do not present infallible evidence, yet a diagnosis can be made with a greater degree of safety at this stage than in the primary period, and until the spirochæta pallida is universally accepted as the causative element or a simple and reliable differential serum devised, the warning of Taylor and others to await the first signs of secondary syphilis before making a positive diagnosis, must be considered.

The second question regarding the length of time treatment should be continued is a matter for men of many years' experience to decide. Fournier, who has practically made a life study of the disease, does not entirely discontinue treatment until after six years, and there are physicians who advise occasional periods of treatment throughout the patient's life. On the other hand, Piffard's routine ceases after the conclusion of eighteen months of careful observation and treatment, and there are physicians who consider one year or less all that is necessary to accomplish the desired result. Most writers agree that syphilis should be treated not less than eighteen months or two years, and there appears to be a tendency of late to prolong the period to three or more years.

The Iodide of Potassium and Persalts of Mercury

It is agreed that the protosalts as a rule produce the most favorable results in the secondary manifestations of syphilis. On the other hand, the persalts of mercury and the iodide of potassium are more efficacious in tertiary and late secondary lesions. Now uncomplicated, well treated cases usually do not present lesions after the symptoms of the secondary period have disappeared. The question naturally arises, therefore, whether the iodide of potassium and a persalt of mercury should be given as a routine measure, or only when specially indicated by the presence of complications. The majority of writers, including both Taylor and Fournier, employ these preparations in their methodical management of the disease. They acknowledge that although the iodide of potassium possesses a remarkable resolving action upon certain syphilitic lesions, it is in no sense a preventive. In all probability the chief value of this drug as used in routine treatment is as an alterative and to combat any possible organic changes which exist without giving rise to objective or subjective phenomena. The persalts of mercury not only have a superior effect upon late lesions, but possess the same if not a greater inhibitory action than that presented by protosalts. The reasons for changing from protosalt to persalt in the second year of routine treatment are two in number. First, that it offers the system a different mercurial preparation which for obvious reasons is not infrequently beneficial. Second, that inasmuch as a persalt is more efficacious in the treatment of late lesions, it might be more energetic in its power to prevent the appearance of such lesions. On the other hand, many syphilographers consider the administration of potassium iodide and persalts of mercury advisable only when specifically indicated. Some, for instance, employ the protoiodide throughout the disease, provided, of course, that the case is uncomplicated; others use injections of either soluble or insoluble preparations, while still others utilize the method of inunction. All these methods are

supported by reliable evidence, and it is left to the physician to select a procedure best suited to the individual patient, and to choose a method which appeals to him as possessing the greatest value in the methodical treatment of typical uncomplicated cases.

RECENT ADVANCES IN THE KNOWLEDGE OF SYPHILIS

THE SPIROCHÆTA PALLIDA (*Treponema Pallidum*)

Historical Sketch

The investigations preceding and leading up to the discovery of the spirochæta pallida are so interesting as to merit at least a very brief review. Ever since 1675, when Antony von Leeuwenhoek was able to demonstrate the existence of bacteria by the perfection of a simple lens, investigators have persistently searched for the etiological factor of syphilis. As long ago as 1837 Donné described a spirillum occurring in the serum of chancres, and in the latter half of the past century thirty or more different organisms have been advanced as the cause of this disease. Plenciz, of Vienna, advanced the animalcule theory of syphilis in 1762. In 1881 a special variety of cocci was discovered by Aufrecht. In 1885 came the announcement of Lustgarten's bacillus which is now considered by many to be identical with the smegma bacillus.

Von Neissen in 1899 not only claimed to have discovered the germ of syphilis, but stated that he had successfully cultivated it on agar and bouillon media. Furthermore, he asserts that he inoculated four monkeys, one pig, one dog, one rabbit, and three guinea pigs with it. He failed, however, to produce culture reproductions from the contagium. The lesions produced upon the animals were examined by his colleagues who considered them as non-specific in character.

In 1901 Justin de Lisle and Louis Jullien advanced as the cause of syphilis a bacillus which they could demonstrate in the blood and serum taken from the skin of patients in the active stage of the disease. By way of controls, they were unable to find the organism in non-syphilitic cases.

Of rather more interest are the investigations of Bordet and Gengou, who, in 1902, three years before the discovery of the spirochæta pallida, claimed to have observed a delicate spiral organism in the exudation from a chancre and a mucous patch. But inasmuch as they were unable to constantly find this organism in specific lesions no further study was made by them at the time.

In the latter part of 1904 Siegel announced the finding of a supposed flagellate, a small spherical, highly refractive and actively motile flagellated organism, which he designated as the cytoryctes lues. He claims to have found this organism in all the active syphilitic lesions and to have followed it through the inferior animals. These observations created some interest at the time, especially in France and Germany. In fact, as a result of being commissioned by the German government to inquire into these reports, Shaudinn and Hoffmann discovered the spirochæta pallida. Siegel's work has received a certain amount of confirmation, but the majority of experimenters, although admitting that these bodies might bear some relation to syphilis, consider them to be artifacts, or the products of degeneration, etc. It has been suggested by Schütz and others that the two organisms might be the same protozoon in a different stage of development.

About the time that Siegel reported his findings the interest in the search for the causative factor of syphilis became intense. No one doubted that the disease was due to a micro-organism, and to prove this fact beyond reasonable doubt some very conclusive experiments were conducted. Klingmüller and Baermann diluted the virus with normal salt solution, and passed it through a Berkefeld filter. They then inoculated themselves with this filtered material, and fortunately obtained negative results, but the positiveness of their findings was lessened by the failure to utilize controls. Metchnikoff and Roux continued and extended these experiments. They employed the aqueous humor of a sheep's eye for diluting the virus, taking all possible precautions as to temperature, contamination, etc. They then inoculated a chimpanzee with syphilitic virus which had been passed through an unglazed filter; the animal failed

to develop any manifestations of the disease. The control animal, on the other hand, which was inoculated with the same virus before filtration developed typical primary and secondary lesions. These experiments at least proved that the etiological factor of syphilis was a micro-organism and also that it was larger than other known germs, for instance, the micro-organism causing the pleuro-pneumonia of cattle, which readily passes through this filter. Further investigation showed that syphilitic virus could be destroyed by heating to 60° C. for one-half hour. The addition of glycerine also prevented its power of infection. That the syphilitic virus has no great vitality when exposed to the elements is well demonstrated by the relatively infrequent inoculations from improperly cleansed surgical, tonsorial and domestic articles. That the supposed micro-organism of syphilis was not too specialized to grow on any but human soil was proven by the experiments upon the apes. And yet, in spite of these facts, the most persistent efforts of learned and experienced investigators failed to isolate any corroborative micro-organism in the blood, the organs, or even in the primary and secondary lesions of the disease, until Shaudinn and Hoffmann, in the early months of 1905, announced their discovery of the spirochæta pallida. The overwhelming mass of confirmatory evidence following closely upon the heels of this announcement was truly remarkable, especially in view of the fact that all previous investigations had excited so little interest, and there now is, throughout the profession, a feeling of confidence that the specific micro-organism of syphilis has at last been found.

Before proceeding to a description of the morphology of the spirochæta pallida it might be profitable to review very briefly the results obtained by the inoculation of various animals with syphilitic virus.

The Animal Experiments

The inoculation experiments upon various animals presents a practical as well as a theoretical value. The early work upon the inferior animals led to experiments upon the lower monkeys, and these again led to further investigations regarding

the susceptibility of the anthropoid apes to infection by human syphilitic virus. These experiments have allowed of investigations into syphilitic problems, which have hitherto failed of solution because previous observations were limited wholly to man. The early literature contains many references regarding the possibility of communicating syphilis to the different classes of vertebrates. In 1866 Turenne believed he had successfully inoculated a cat with the virus of human syphilis. In 1868 Legros and Lanceraux claimed to have produced the disease in a guinea-pig. Some time later Martineau, Hugel, and Holzhauer described syphilitic lesions which they had produced in swine. In 1899 Adrian experimented with guinea-pigs, dogs and swine; in the guinea-pigs and dogs the inoculations were negative, but in the swine they appeared to be followed by clinical and microscopical evidence of the disease. In the same year von Neissen claimed success in his experiments on swine, dogs, rabbits, and guinea-pigs. These investigations had a decided tendency to strengthen the opinion prevailing at that period to the effect that swine were especially susceptible to human syphilis. The majority of the above experiments were repeated many times by other investigators without success, they were therefore lacking in confirmation. Although it is possible that one might succeed under favorable circumstances in obtaining an occasional local reaction by the use of syphilitic virus in the inferior animals it is highly probable that the majority of these reports were based upon insufficient evidence. Very recently, however, Bertarelli, Greef, Clausin, Scherber and Hoffmann report local reactions obtained by injecting syphilitic material into the cornea and anterior chamber of rabbits' eyes. In one instance the virus was carried in this manner through six generations of rabbits, and virus from the fourth animal infected a monkey. The local lesions presented microscopical as well as clinical evidence of the disease, and also contained organisms considered to be the spirochæta pallida. Experimental studies with the monkeys have been far more successful than with animals having a remote zoölogical relationship to man. Neisser, Metchnikoff and Roux have shown that the susceptibility of

monkeys is in direct relation to their zoölogical position. The chimpanzee heads the list, developing both primary and secondary lesions. In the gibbon, orang-outang and gorilla the secondaries are very uncertain and unsatisfactory, while in the lower monkeys the chancre is the only obtainable syphilitic reaction.

Among the first experimenters to employ monkeys for this purpose were Klebs in 1879 and Martineau in 1882, but their findings never received much support. Sperk in 1886 succeeded in transmitting human syphilis to the macac species. Three out of forty-six monkeys developed chancres, and the virus was passed from one monkey to another.

Of considerably more interest and value are the investigations of Metchnikoff and Roux, the first reports of which were published in 1903. They inoculated a chimpanzee on the prepuce with virus from human chancres. The primary lesion which was accompanied with inguinal adenitis developed in twenty-three days. One month later a papular syphilide appeared on the thighs, abdomen and back, which persisted to the time of the animal's death, several weeks later. A second chimpanzee was then inoculated with virus taken from the first animal twenty-two days after the appearance of the chancre. The result of this experiment was fully as successful as the first. A third animal of the same species, some time after developing secondary manifestations, including persistent mouth lesions, presented a paraplegia which lasted over a month. Out of twenty-two chimpanzees sixty-six per cent. of those that lived long enough developed typical secondaries.

Lassar's investigations confirmed the foregoing. He observed the regular development of primary and secondary lesions and also the transmissibility of the virus from one animal to another.

Many of the lesions produced by the above-mentioned experiments were examined clinically by Fournier, Hallopeau and others, and were declared to be syphilitic. The lesions were also examined histologically by Becker, Mayer, Arnal and Salmon, who considered them to agree with corresponding lesions in the human subject.

The spirochæta pallida has been followed through both the high and low monkeys by many observers. It has been found both in smears and sections from the primary and secondary lesions. It is exceedingly unfortunate that the most susceptible apes do not live a sufficient length of time to allow of the possibility of tertiary lesions. They appear to be extremely susceptible to pneumonia and other acute infectious diseases.

An extensive series of experiments on monkeys is being conducted in Java under the direction of Professor Neisser. This commission has already confirmed and extended the preceding investigations. Neisser considers the disease in monkeys to be true syphilis, because, first, the histology of the lesions is specific; second, the animal becomes immune to re-inoculation after the development of the chancre; and, third, because mercurial treatment greatly retards the disease.

As a direct result of these experiments considerable light has been thrown upon the methods of infection, immunity, etc. It has, for instance, been demonstrated that a chancre will develop if the virus be applied to a superficial abrasion, while on the other hand, if the virus be injected into the subcutaneous tissues, no manifestations of syphilis will develop. This would make it appear as if deep wounds were not as dangerous as superficial ones, and as Ewing points out, it is quite possible that the leucocytes of the deep tissues destroy the virus before extensive multification takes place. It would also appear as if the chancre, preceding constitutional syphilis was a necessity. To offset this theory, however, there are several records of cases of constitutional syphilis following accidental punctured wounds in which a chancre was never observed.

It has been shown experimentally that the virus exists in the circulating blood in certain stages of the disease. Hoffmann in two of four attempts succeeded in producing syphilis in monkeys by the superficial inoculation of blood from human syphilitics taken forty days and six months after the appearance of the chancre. That syphilitic blood is not extremely infectious is shown not only by such experiments, but also by the difficulty of finding the spirochæta pallida in this location and by the infrequency of infection following acci-

dental punctures while giving hypodermic injections of mercury.

It has always been considered that tertiary lesions are not contagious, but the recent finding of pallidæ in this stage of the disease has changed the views so long held by syphilographers. Experimental syphilis has also shown that a certain percentage of tertiary lesions are capable of transmitting the disease. Neisser was able to produce chancres in two monkeys with material taken from a non-ulcerated gumma. All ulcerated lesions and many non-ulcerated ones failed to produce infection.

Immunity and Serum Therapy

The important question of immunity and the development of curative serum or vaccine has not been associated with laudable success. The most important work in this field appears to have been accomplished by Kraus, Spitzer, Neisser, Metchnikoff and Roux. Antedating the work of these experimenters may be mentioned the observations of Tomassoli, Pellizzari, de Lisle, Richet and Héricourt, who employed human serum as well as that from the inferior animals. Inasmuch as their observations rested upon clinical evidence alone their findings were never substantiated. Of rather more interest are the observations of Kraus and Spitzer, who based their method upon the successful outcome of the immunizing experiments in rabies, where antibodies were produced by the injections of large quantities of the specific toxine. They experimented upon fifteen human syphilitics, making their diagnosis as soon as local glandular enlargement followed the chancre. During the course of their work the spirochæta pallida was discovered, so in the last few cases they made their diagnosis by demonstrating these organisms. An emulsion of human chancres was injected subcutaneously in a concentration of 1-200 to 1-20 daily, for from eleven to twenty times. Seven patients presented secondary symptoms after the usual period of incubation, the remaining patients had either a greatly delayed eruption or none at all. The involu-

tion of the lymph glands was rapid in all the cases. These observations, although interesting and worthy of note, are subject to three objections: First, that secondary symptoms frequently fail to appear in untreated syphilis; second, that syphilis may possibly be spontaneously aborted in the primary stage; third, that inasmuch as the spirochæta pallida has not been irrevocably accepted as the cause of this disease, there is still the possibility of error in basing the diagnosis upon the demonstration of these organisms. Besides these facts the experiments lack corroboration. In fact, Brandweiner, who endeavored to repeat them, employing material from chancres, lymph nodes and condylomata, obtained negative results in every one of seven cases.

Metchnikoff and Roux in a series of articles appearing in the *Annals de l'Institut Pasteur,* give an interesting account of their experience with the apes and monkeys. They first proved beyond any reasonable doubt that human syphilis could be transmitted to the monkeys; also that the virus could be passed from one animal to another, and that the susceptibility of these animals depended on their zoölogical relationship to man. Later they demonstrated the passage of the spirochæta pallida through these animals. Their experiments in the hope of developing a curative or immunizing serum, although disappointing, were both interesting and instructive. Their method consisted in inoculating a macac monkey (a species presenting considerable resistance to syphilis) with human virus and cause a chancre to develop. After the lesion healed the animal received a subcutaneous injection of virus taken from a patient during the active secondary stage of the disease. The serum from these monkeys failed to confer immunity when injected into another animal, but it did appear to possess a certain degree of preventive action when mixed with the virus before inoculation. Both Metchnikoff and Neisser endeavored to produce a vaccine through attenuation of the virus by passing it through several series of lower monkeys. Inoculation with this virus, supposedly of low virulence, failed to produce immunity. It is quite possible as Metchnikoff states, that these failures are due to the impossibility of injecting sufficiently large quantities

of syphilitic material, and it is doubtful if sera of high valence will be forthcoming until the pallida can be artificially cultivated. Several investigators are at present experimenting with animals having a marked degree of resistance against this disease for the purpose of obtaining a serum possessing therapeutical value.

The following question naturally arises: What is the hypothesis of syphilitic immunity? It is well established that there are but few second attacks of this disease in the same individual; Colles' and Profetas' laws have had but relatively few exceptions. It would therefore appear as if one attack of syphilis does confer a more or less complete immunity to the individual. This acquired immunity was thought to occur on account of antibodies produced by the system against the syphilitic virus. Neisser, however, goes so far as to suggest that possibly what we are accustomed to consider immunity in an individual who in consequence of a previous infection has become refractory to subsequent inoculations may not be immunity at all, but may simply depend upon the persistence of a latent syphilis. Such a theory is not altogether without support. Recent experiments have shown that men and monkeys are usually insusceptible to re-infection during the active stage of the disease, but during all periods re-inoculation is possible. Curiously enough re-inoculation in the tertiary stage of the disease is usually productive of tertiary lesions only. Buschke and Fischer were able to demonstrate pallidæ in the inguinal lymph nodes of a woman entirely free from syphilitic manifestations, but who had given birth to a specifically diseased infant. As has already been stated, subcutaneous injections of syphilitic material in monkeys fail to produce the disease, therefore, if the embryo becomes infected by way of the semen and the maternal genitals escape, the mother receives what is analogous to a subcutaneous injection, and escapes active manifestations of the disease. These facts may explain the workings of Colles' and Profetas' law. Although exceptions to these laws have been recorded, yet there undoubtedly is immunity, or at least a resistance to infection produced, but inasmuch as many mothers in the case of Colles' law, and children in the case of

Profetas' law, develop tertiary lesions in later years, Neisser's theory must receive consideration. It is possible also that if apes could be injected with as large quantities of virus of high potency as is received by non-syphilitic mothers bearing diseased infants, the apparent immunity might be the same in both cases. The whole question of syphilitic immunity, whether naturally acquired, inherited, or of experimental origin, is certainly very perplexing and presents an interesting field for investigation.

Serum Diagnosis

The most important, conclusive and recent work in this line has been done by Wasserman, Neisser and Bruck by a method of complement diversion or anchorage, as devised by Bordet, Gengou and Moreschi. Previous to the report of these investigators De Lisle and Jullien who had already advanced their bacillus as the cause of syphilis claimed to obtain an agglutination of these organisms when mixed with syphilitic serum. They considered such a test as positively diagnostic, notwithstanding the fact that their observations lacked even a minute degree of reliable corroboration. Of far greater value are the investigations of Hoffmann and Prowazek, who noticed that the spirochætæ pallidæ lost their motility and showed a tendency to agglutinate when combined with specific serum. Non-syphilitic serum used as a control gave negative results. Similar experiments were carried out by Zabolotni and Maslakortz, who noticed in addition to the agglutination, a fragmentation of the organisms. In this connection it is interesting to note the fact that Beer has been able to keep living pallidæ under observation in microscopical preparations for a period of thirty-three days.

To thoroughly understand the theory of the experiments as conducted by Wasserman, Neisser and Bruck, one should be well acquainted with the side-chain theory of Ehrlich. In any advent an appreciation of the terms hæmolysis, antigen, antibody, inactivated serum, etc., as well as their formation and value is a necessity. If an animal is injected with the blood from another animal of different species, the blood of the

injected animal acquires, after a time, the property of dissolving out the hæmoglobin from the erythrocytes of the injected blood. The serum of the first animal has become hæmolytic for the blood of the second animal of different species, and the phenomena is called hæmolysis. It has been shown that this process depends upon the presence of two substances in the serum of the injected animal; first, complement, a chemical body which is present in all blood and is easily destroyed by heating for one-half hour at a temperature of 56° C. Second, the amboceptor, immune body or antibody which develops after the injection of foreign blood. This substance is extremely resistant to heat. To explain still further: if a sheep be injected with the blood of a rabbit, the foreign blood excites the production of a chemical substance in the sheep's blood which is known as the amboceptor. The sheep's serum will now contain complement and amboceptor. If now the red blood corpuscles of a rabbit be added to the above serum hæmolysis will take place at once because the complement, amboceptor and what might be considered as the hæmolytic antigen contained in the red cells of the rabbit unite and become bound in chemical union. If any other red cells but those of the rabbit were used hæmolysis would not occur, because the sheep's serum was prepared against the rabbit's blood, and therefore contained a specific antibody which had chemical affinity only for its specific antigen. Of course it must be understood that serum may be prepared against the red cells of any animal.

The term inactivated serum may be explained as follows: if the sheep's serum as above prepared be heated to 56° C. the complement will be destroyed, but the amboceptor remains; if now the washed red cells from a rabbit (washed free of complement) be added to this serum hæmolysis will fail to occur, because it is impossible to obtain the necessary chemical union between the three bodies. Such serum is known as inactivated hæmolytic serum. Normal serum (complement) may be added to the above mixture and hæmolysis will take place; in this maner the sheep's serum has been reactivated.

A process somewhat analogous to the formation of the above hæmolysins takes place in the blood of animals subjected to the

influence of bacterial substances, either by injection or as a natural result of the infectious diseases. The presence of bacterial proteids (antigen) in the blood excites the development of specific antibodies. Here again are three bodies: first, complement, originally present in the serum; second, bacterial substances or antigen; third, immune body, amboceptor or antibody, the development of which was caused by the antigen. A more or less complete union of these three bodies take place, and, as pointed out by Pollitzer, it is probably this process that produces immunity in many diseases.

As has already been seen, to obtain an experimental union of the three hæmolysins the amboceptor must be produced by injecting into one animal, blood from which the red cells are to be obtained. In other words, the amboceptor must be specific, and the same theory is true of the bacterial antibodies. This is well explained in the following manner by Pollitzer: "If blood serum (antibody) from any source but a typhoid case, for instance, be used for the mixture of typhoid bacilli (antigen) there is no union of complement, antibody and antigen, because no antibody except the specific antibody of typhoid will unite with the typhoid antigen, and in that case the added complement will remain free to unite with the hæmolytic body subsequently added. Conversely, if any bacterial substance (antigen) except typhoid be used, the union of antibody, antigen and complement will also fail. We have, then, in this method, as Neisser and Sachs showed, a means of determining the presence of either antibody or antigen."

As a further example to help understand the action of these bodies, take two mixtures, the first to consist of serum from a human subject suffering with typhoid fever and heated to 56° C. This serum will contain specific antibody, but no complement, and may be called inactivated immune serum. To this serum add some typhoid virus (specific antigen) and some normal serum (complement); allow to stand, and a union will take

NOTE.—Complement is called alexine by Bordet and cytase by Metchnikoff. The amboceptor besides the various terms above-mentioned is designated by Bordet as sensibilisatrice and by Metchnikoff as fixateur. It is also known as the intermediate body and as precipitin. The term antigen simply means any substance capable of the production of antibodies, such as bacteria, bacterial derivatives (proteids), red cells, etc.

place, binding the complement, antigen and antibody together providing of course the proportions and technics were perfect. The second mixture to consist of inactivated hæmolytic serum, prepared against human blood, with its appropriate red cells. The two mixtures when combined fail to produce hæmolysis because the complement has become anchored by combining with the specific antibody and antigen, and is therefore not free to unite with the hæmolytic body. If, on the other hand, the patient did not have typhoid the serum would not contain specific antibody, union of the three bodies would fail to occur and the complement remain free to unite with the hæmolytic body and bring about hæmolysis. The idea of determining the presence of specific antibodies by the inhibition of hæmolysis belongs to Bordet and Gengou, who reported their findings in 1901. In a very recent article Levaditi in explaining the theory of Bordet and Gengou's method presents the following table, which very clearly represents the entire process:

First—Complement + amboceptor hæmolytic + red cells = hæmolysis.

Second—Amboceptor hæmolytic + red cells = absence of hæmolysis.

Third—Antibody + antigen (microbes) + complement = fixation of the complement.

Fourth—Antibody + antigen + complement, then amboceptor hæmolytic + red cells = absence of hæmolysis.

This method has been successfully applied in Germany in determining the presence of antibodies and antigen in many of the infectious fevers. Wasserman, Neisser and Bruck, however, were apparently the first to employ it in the diagnosis of syphilis. Their method is as follows: Apes are first injected with large quantities of syphilitic material. After a suitable length of time serum is extracted, inactivated by heat and combined with more syphilitic virus. Such a mixture will contain specific antibodies as a result of the reaction of the system against the original injections of syphilitic virus. It will also contain specific antigen because of the addition of

syphilitic virus to the serum after its extraction. There can be no combination of the three bodies as yet on account of the destruction of the complement by heat. Fresh guinea-pig's blood (complement) is now added to the above mixture, and the whole allowed to stand until the three bodies have had time to combine. It might be stated that the complement contained in the original serum could be utilized, but complement from the guinea-pig's blood is preferable because a given quantity can be employed, thereby obtaining greater accuracy. A second mixture consisting simply of inactivated hæmolytic serum (containing the appropriate red cells) is now added to the first mixture. Hæmolysis fails to take place because the added complement has been anchored in the first mixture, and therefore is not free to reactivate the hæmolytic serum.

In their experiments Wasserman, Neisser and Bruck have shown: First, that immune serum of apes gives the reaction only with syphilitic material of man and apes, not with non-syphilitic material from either.

Second, that normal non-syphilitic ape-serum is ineffective with syphilitic material.

Third, serum of apes treated with extracts from the organs of non-syphilitics gives no reaction with human syphilitic material.

Fourth, immune serum works equally well whether prepared with human or simian syphilitic material.

Practical Importance of the Diagnostic Serum

First, by this method it is possible to determine the presence or absence of syphilitic antibodies or antigen in the blood of patients supposedly suffering from syphilis.

Second, it is possible to demonstrate the syphilitic virus or antigen in a given organ, as has been shown by Neisser, Bruck and Schucht.

Wasserman and Plaut examined the cerebro-spinal fluid from forty-one cases of paresis, employing nineteen controls. The reaction failed in every one of the control cases. Out of these forty-one cases they obtained a positive reaction in thirty-two

cases, partial in four, while the remaining five were negative.

Schütz applied the test to twelve cases of tabes. In eight cases presenting a history of syphilis the reaction was positive. In four cases with no syphilitic history the reaction was negative. Syphilitic antigen has also been shown to exist in the placenta of syphilitic pregnant women, in syphilitic blood during the active stage of the disease, and in patients presenting tertiary manifestations.

At present the technics of the method are so difficult as to preclude its use as a routine measure, but it is to be hoped that a way will be forthcoming whereby the advantages of this valuable diagnostic aid will be within reach of the average practitioner.

The serum diagnostic method will in all probability soon clear up the question regarding the etiology of tabes and paresis, throw light upon the question of immunity and latent syphilis, and be of great service in the diagnosis of all obscure cases of the disease. It will also support or explode the theory held by Taylor regarding the spontaneous abortion of syphilis in the primary stage, the theory advanced by Neisser to the effect that immunity and latent syphilis are possibly synonymous, and the theory held by G. Lenox Curtis (*Medical Record*, October 14, 1905) regarding the syphilitic origin of diabetes.

Morphology of the Spirochæta Pallida

The spirochæta pallida is a very delicate structure from four to twenty microns long (average ten, about the same as the diameter of a human red cell), one-fourth to one-half micron in diameter, and presenting between four and twenty-six very sharp coils, making it resemble a corkscrew. The terminals of the organism appear pointed. The unstained organism is only slightly refractive, and is seen with difficulty. It rotates upon its long axis, and convulsive movements may be seen running up and down the spiral.

It appears to be able to move forward or backward with equal facility, but at present it is undecided if the organism possesses any true locomotion. It is possible to keep them alive

for two or three weeks if allowed to remain in the original serum, which must be placed in the chamber of the hanging drop-slide, sealed in by wax and kept at the proper temperature. They may be easily examined in the fresh state by the usual hanging drop method or, better still, a hair may be inserted between a slide and cover glass, and the serum from a chancre or other lesion allowed to be drawn in by capillarity.

If Shaudinn's technics are exactly followed the pallida will stain red, while other forms of spirochæta take a blue color, but this differentiation is inconstant because a very slight modification in the method will change the result. Shaudinn is of opinion that the pallida does not possess an undulating membrane as in the case of other spirochæta, but by the use of Loeffler's stain (a stain possessing the power of bringing out morphological details) he was able to demonstrate terminal flagellæ. Regarding the undulating membrane it has practically been conceded that one does not exist, but there is still a controversy over the existence of flagellæ. Many investigators have never been able to satisfactorily demonstrate such a feature. Goldhorn was able to find an occasional organism presenting a prolongation which, although rather thick, might be termed a flagellum, and it was necessary to examine several hundred specimens before locating one organism presenting such a morphological feature. Regarding the other morphological characteristics he has found individual organisms having as many as twenty-nine curves, and one in particular presenting not less than forty turns and extending across the greater part of the microscopical field.

Regarding the manner of reproduction of the pallida, very little is known, and it is extremely doubtful if accurate knowledge regarding this feature will be had until the organism is artificially cultivated. At first many observers thought they saw evidence of longitudinal division. Goldhorn, at the February, 1906, meeting of The New York Pathological Society, expressed the belief that longitudinal division occurred, leading to the production of three or four individuals which remained attached end to end before transverse section. He based his statement on the fact that certain short, thick organisms would

apparently give rise at one end to several individuals. Again, he was able to show many organisms which were double, others in the act of uncoiling, and still other long organisms with one or more attenuated spots. Later he decided that the double organisms were simply two or three individuals intertwined, while the grouping of several organisms at one end of a single individual were produced artificially in making the smear. The attenuated areas he now considers as evidence of transverse division. Such observations appear to be in accord with the more recent studies. In fact, work along this line by Novy and others would seem to produce many points of similarity between the spirochæta pallida and the spirillum Obermeieri, especially regarding the mode of reproduction.

As to whether the pallida is a bacterium or a protozoon is likely to remain an undecided question for some time. The earlier writers considered it to be a protozoon, and many maintain this belief to the present day. Recently, however, there has been a tendency for experimenters to favor its being a bacterium. In favor of its being a protozoon may be mentioned the following points:

First, that all attempts at cultivation have failed. (Leriaux, Geets, Kraus, Volpno and Fontana in recent articles report some success in cultivation.)

Second, the apparent similarity between syphilis and dourine, a disease of horses due to a trypanasome.

Third, the possibility of longitudinal division.

Fourth, the possible existence of flagellæ.

Evidence of its being a bacterium may be summed up as follows:

First, the absence of any direct evidence of an intermediate host.

Second, the evidence of transverse division.

Third, the absence of an undulating membrane.

Fourth, the general features of resemblance between the spirochæta pallida and the spirillum Obermeieri. (The spirillum Obermeieri is the organism found in relapsing fever and considered to be a bacterium. It has recently been cultivated by Novy.)

In many syphilitic lesions, especially upon the surface of ulcerating sores, but occasionally deeper in the lesions, may be found spirals occupying an intermediate position between the pallida and refringens. Kryetalowicz, Siedlecki and Schultz regard these coarser spirals as the female macrogamite and the finer ones as the male macrogamite of a protozoon cycle, but as Ewing points out, it is much more reasonable to admit of certain variations in the form of pallida, refringens, etc. The evidence on both sides is, however, very incomplete, and there is a growing tendency among recent investigators to form a new genus to provide a position for the spirochæta pallida. In fact, Shaudinn and Veuillemin have already anticipated this necessity and have suggested that the organism be called triponema pallidum.

Occurrence of the Spirochæta Pallida

Spirochætæ pallidæ are readily demonstrated in smears made from chancres, mucous patches, condylomata and moist skin lesions. It must be remembered that the surface of these lesions abound with the ordinary saphrophitic spirochetes, and therefore the surface secretions must be wiped away and the lesions lightly curetted before making the smear. In smears made from enlarged lymph nodes situated near a chancre and from the macular and papular eruption of secondary syphilis the finding of the pallida is attended with no little difficulty, although very few, if any, observers have failed to locate the organism in these lesions. In the circulating blood pallidæ have been found in very few instances. Raubitschek, Noeggerath, Staehlin, Sobernheim, Tomasczewski and a few others have by the aid of centrifugation been able to find the organism in this location. In tertiary lesions they are also sometimes found. Tomasczenski found them in five cases, Spitzer and probably a half dozen other investigators assert that they found them in this stage of the disease.

Ehrmann succeeded in demonstrating the pallida in the nerve fibers, the specimen being taken from a chancre of the prepuce. He thinks they travel through the lymph spaces to the neurilemma and along this path to the central nervous system.

It is interesting to note the finding of pallidæ in semen in cases of secondary syphilis, as bearing upon the paternal infection of the infant.

In the tissues of infants suffering with congenital syphilis practically all experimenters have been able to satisfactorily demonstrate the pallida in very large numbers. The organism has been found in the liver, adrenals, intestinal walls, spleen, cutaneous lesions, lymph nodes, kidney, heart-muscle, lung, lumina of the blood and lymphatic vessels, urine, meconium and in the nasal mucous membrane. Buschke and Fisher were probably the first investigators to demonstrate these organisms in congenital syphilis. Their findings were immediately followed by a flood of confirmatory reports. Simmonds, for instance, in a large number of examinations found the organisms in most all of the above organs, but they appeared most numerous in the liver and intestinal walls. He also found them to be present in large numbers in the meconium. Schlimpert located the pallidæ in sections of the stomach, mesentery, gall bladder, peripheral nerves, the thymus and thyroid glands, the tonsils and tongue. Versilova was able to trace the organism through the placenta. Babes and Panea demonstrated Shaudinn's spirochætæ in the adrenals. Domernikova found them in the alveolar walls of lung tissue taken from an infant which died from the effects of syphilitic pneumonia (pneumonia alba).

Livaditi, who has devoted considerable time to this work, gives in a recent article appearing in the *Annals de l'Institut Pasteur* a very interesting and instructive description of his findings. The report consists mainly of observations upon four cases of heredo-syphilitic infants. The first baby died one-half hour after birth without any macroscopical evidence of the disease. The second and third infants died several hours after birth, and presented marked evidence of syphilis. The fourth developed symptoms one month after birth and succumbed one month later. Spirochætæ pallidæ were found in all four cases, a study of which has led him to the following conclusions:

First, the influence of the spirochæta pallida in the genesis

of the vesicular and cutaneous lesions of hereditary syphilis is certain. The organisms appear in numerical abundance in direct relation to the macroscopical appearance of the organ.

Second, the number of organisms and their distribution appear to be in direct relation to the severity of the affection.

Third, in cases of maternal origin, the liver which is the first organ reached by the placental blood, presents the largest number of organisms and also the greatest pathological changes. The organisms must therefore enter by means of the blood circulation.

Fourth, although the organisms enter the fœtus by means of the blood current they do not develop until they gain entrance into the parenchyma and connective tissues of the organs.

Fifth, the spirochæta acts as a direct agent in pathogenesis, and not through its toxines.

Sixth, maceration in the dead body is not a result of the pallida, but rather due to natural causes.

Seventh, the body relies upon phagocytosis to combat the invasion of the organisms.

Eighth, the finding of free spirochætæ in the renal epithelium, in the bronchi, in the papillæ of the skin and in the lesions upon its surface, suggests the possibility of spreading the disease by means of the expectoration, perspiration and urine.

There are many other reports from various countries of positive findings in similar cases. Among American observers may be mentioned Flexnor, who had no difficulty in locating pallidæ in syphilitic infants.

Occasionally one reads of the finding of the spirochæta pallida, or an organism having similar morphological characteristics in lesions other than those produced by syphilis. Ewing, for instance, states that he found in one case of acuminate condylomata and one ulcerating epithelioma of the penis, spirochætæ which could not be certainly distinguished from pallidæ. He cites Kiolemenoglu and Cube, who found spirochætæ closely resembling pallidæ in balanitis, scrofulous abscess, pointed condylomata and carcinoma, but Shaudinn, who also examined the specimens, did not admit of any difficulty in distinguishing them from pallidæ.

Between pallida and refringens intermediate forms are not infrequent, with the result that many observers have claimed, and Shaudinn himself has admitted, that it is not always possible to distinguish between pallida and other forms of spirochætæ. Ewing, however, considers the fact that no one has encountered considerable numbers of very long slender spirals, possessing from fifteen to twenty coils, in any but syphilitic lesions and under such circumstances he believes a diagnosis may be safely given from stained smears.

Hoffmann succeeded in finding, in three cases of ulcerating carcinomata, spirochætæ which could not be easily differentiated from pallida, but insists that the morphological features were not characteristic. In a later report he gives a table of three hundred cases of syphilis in which the pallida was constantly present, and he doubts the accuracy of the technic in the few cases in which others assert positive findings in non-syphilitic cases. In April, 1906, Ballenger compiled a list of seventy-five independent observers who had demonstrated the pallida in all of the contagious lesions of syphilis, and this list at the present time could be increased to several hundred.

Of particular interest is the report of Castellani in reference to his work on yaws. The relationship between this disease and syphilis has been the subject of numerous discussions among physicians, particularly those interested in tropical diseases. The geographical distribution, clinical symptoms and the histopathology of yaws, together with the fact that syphilis is not unknown in the tropics, would tend to separate the two diseases. On the other hand, Castellani was able to demonstrate the presence of a delicate spiral organism having morphological features resembling, if not exactly like, the pallida. His observations have been confirmed by Wellman and Powell. If further observations should prove yaws to be a spirochæta disease and its organism to be morphologically indistinguishable from the pallida, a condition similar to that existing between tuberculosis and leprosy will be produced.

Many observers not only consider the pallida to be unassociated with the cause of syphilis, but think that many of the investigators are dealing with artifacts instead of micro-

organisms. Campana, for instance, asserts that spiral formations may occur as a result of the coagulation of the albuminous secretion on the slide, and may be mistaken for pallida. Also the chromatin of tissue cells is often found in spiral formation, especially about the nucleus. The spirals of chromatin stain deeply, while the protoplasm stains lightly, and they represent the condition of chromatin fibers resulting from the nucleus arrested in death. In the vessel walls elastic fibers may be mistaken for spirochætæ, while another source of error is in the stained peripheries of tissue cells, which often present a spiral appearance.

Saling and Schultz also consider that spiral formations in tissue sections may be produced by Livaditi's stain. They find that this method demonstrates axis-cylinders and non-medulated nerve-fibrils in a form which is indistinguishable from spirochæta pallida.

Undoubtedly much unreliable evidence has been offered regarding stained specimens of pallida in smears and tissue sections. The fact still remains, however, that the vast majority of skilled and conservative pathologists, although admitting the resemblance of pallida to certain other forms of spirochætæ in smears and to artifacts in tissue sections, find little difficulty in making the necessary distinction. The literature contains a relatively small amount of reasonable criticism against the pallida being the etiological factor of syphilis, and when it is considered that the pallida must be recognized from morphological features alone it is surprising that there is not a greater amount of adverse criticism. It is questionable if any previous discovery of a specific micro-organism has been followed by such a mass of reliable corroboration and so little criticism as in the case of the spirochæta pallida; certainly not in the case of the gonococcus, pneumococcus, bacillus tuberculosis, etc. When one holds the balance and carefully weighs the evidence pro and con, not individually, but as a whole, it is found that the arguments in favor of this delicate and elusive organism being the cause of the disease in question is fairly conclusive.

Staining Methods and Technics

Practically all stains used for this purpose are modifications of the well-known Romanowsky method. Probably the best known modification and the one considered the most reliable is that of Giemsa, which was the one first employed by Shaudinn and Hoffmann. The stain consists of the following:

First, twelve parts Giemsa's eosin solution (2.5 c.c. of 1% sol. to 500 c.c. distilled water).

Second, three parts azur 1 (sol. 1-1000 water).

Three, three parts azur 2 (sol. 0.8-1000 water).

Another method of preparation is as follows:

Three grams of azur 2–eosin and 0.8 of a gram of azur 2 are exsiccated, finely pulverized and sifted and then dissolved in 250 grams of C. P. glycerine at a temperature of 60° C. When the solution is complete, 250 grams of methyl alcohol at a temperature of 60° C. are added, the whole well shaken, allowed to stand for twenty-four hours and filtered.

The Giemsa stain is prepared by Grubler in the fluid form ready for use. In using the stain very thin smears should be made upon cover glasses. They are first fixed in methyl or ethyl alcohol for ten minutes and allowed to dry. The stain is then diluted with distilled water, in the proportion of one drop of stain to one c.c. of water. The specimen is allowed to remain in the solution for from one to twenty-four hours, washed gently and mounted. Specimens may be stained in fifteen minutes by the addition of from one to ten drops of a 1–1000 potassium carbonate solution to the water with which the stain is diluted. The great objection to this method is in the time required and also the fact that the organisms stain so faintly as to be frequently overlooked even by experienced observers.

Proca's stain is highly recommended by Ewing. The organisms are deeply stained by this method, which makes it of great value in photography. It consists of the following:

Fix thirty seconds in alcohol, or two to five seconds in vapor of 1% osmic acid. Apply the following mordant for ten minutes: Carbolic acid, 50; tannin, 40; water, 100; to which

add basic fuchsin, 25, dissolved in 100 c.c. absolute alcohol. Wash with water. Stain five minutes in concentrated alcoholic solution of gentian violet, 10; carbolic acid, 5; distilled water, 100; wash in water, dry and mount.

There are many other good methods for staining the pallida, among which may be mentioned the following procedure as suggested by Wood: The smears are first fixed in strong methyl alcohol and then dried by means of blotting paper. A few drops of a 1–1000 solution of yellow watery soluble eosin are spread over the specimen by means of a pipette; then, four or five drops of a 3–1000 aqueous solution of methylene azur-2 are added. The two dyes are thoroughly mixed over the film by tipping the slide backward and forward. The mixture is then allowed to stand for ten minutes. The specimen is then washed with running water, dried and mounted. The objection to this method is that a large amount of precipitation occurs, which seriously interferes with the examination. This precipitation may be largely overcome by the liberal use of running water, or by dipping the specimen for one second in alcohol. This procedure, however, is objectionable because both the water and the alcohol robs the organism of some of its dye.

Taking everything into consideration, it is doubtful if any stain for the purpose of demonstrating the pallida in smear preparations surpasses that prepared and placed on the market by L. B. Goldhorn. This dye fixes and stains at the same time, and the entire procedure occupies but a few seconds. It also has the advantage of being an excellent stain for general purposes, and inasmuch as the technic is so simple and the result so satisfactory it is of special value for routine office and laboratory work.

The stain is prepared as follows: In 200 c.c. of water two grams of lithium carbonate are dissolved and two grams of methylene blue are added. While some other carbonate may be used the lithium salt seems to produce superior results. The methylene blue may be either Merk's medicinal, Grubler's BX, or Koch's rectified. This alkaline methylene blue solution is heated in a double boiler with a moderate amount of heat until

a rich polychrome has formed. The steps leading up to this formation are followed by taking, every few minutes, a sample in a test-tube and examining by holding it against artificial light. As soon as a distinct red color is obtained the desired degree of heating has been reached. The solution must not be allowed to boil. During the cooling, which is allowed to take place spontaneously, more of the polychrome will form. The residue which is undissolved, is removed from the cooled dye by pouring through a piece of cotton placed in a funnel. To one-half of this alkaline polychrome solution 5% acetic acid is gradually added until a strip of litmus paper shows, above the line of discoloration, a distinct acid reaction. The remaining half of the solution is now added, so as to carry the reaction back to a low degree of alkalinity. A weak eosin solution is now prepared, approximately one-half per cent. French eosin, and this is added gradually, while the mixture is being stirred, until a filtered sample shows the filtrate to be of a pale bluish color with slight fluorescence. The mixture is allowed to stand for one day and then is filtered. The precipitate which has separated is collected on a double piece of filter paper and dried at room temperature, or at a temperature not exceeding 40° C. Excessive heat injures the dye. When this precipitate is completely dry it is readily removed from the filter paper and may then be dissolved without further washing in commercial wood alcohol. This solution should be allowed to stand for one day in an open dish and then be filtered. An alcoholic insoluble residue may be present which will be removed by the filtration. The strength of this alcoholic solution is approximately one per cent.

This stain[1] has been placed on the market, but, unfortunately, it appears to deteriorate to some extent after a number of months, due apparently to a change in alkalinity, and it is advisable therefore to obtain the dye as soon after its manufacture as possible. After one becomes thoroughly familiar with the stain the fact that it does not stain the pallida so well after a few months will make but little difference, for by slight

[1] Since this article was written, Goldhorn, by a slight modification in the manufacturing technics, has succeeded in producing a stain possessing greater lasting qualities.

modifications in the technic very good results may be obtained with very old stain.

The following technic will assure satisfactory results with fresh stain and fresh smears (after the stain begins to deteriorate this technic may be modified to suit the condition of the dye and to equalize the personal equation which enters into all such procedures). Take, for instance, a mucous patch on the tongue or lip, with a sharp curette scrape the surface on the edge of the lesion until a slight amount of serum appears, obtain the material by employing a platinum wire and smear on a clean glass slide, or, better still, make an impression smear by touching the lesion with the slide. Allow the smear to dry spontaneously. Apply the stain to the unfixed smear by the aid of a medicine dropper. After allowing it to cover the smear for four or five seconds, pour it off and slowly introduce the slide into a glass of clean water at room temperature. While allowing the dye to remain on the smear it should be kept in motion by tipping the slide from side to side. The slide should be introduced into the water in a slanting direction, and with the film side down, to prevent any of the precipitate remaining on the preparation. Hold in this position for three or four seconds and then gently wave through the water a few times. The specimen may be dried by shaking in the air, or, better still, by allowing it to stand on end for a few minutes. Never dry by heat or by blotting paper, and never wash in running water. It will be noticed that when the dye, which is blue, comes in contact with the water it turns purple, the active azur being formed. It is essential that the specimen be held stationary in the water a few seconds while this is acting. The entire process occupies but a few seconds, is extremely easy of accomplishment, and if carefully done will give gratifying results. A well stained specimen is obtained in this manner and the pallidæ appear of a violet color, which may be changed to a pronounced and deep bluish-black by flooding the stained preparation for fifteen to twenty seconds with the ordinary iodo-iodide of potash solution of Gram, washing and drying as usual. In this manner one is enabled to prepare beautiful specimens for photographic work. In preparing specimens for

future study it is better to mount in cedar oil instead of balsam as the latter will be found to bleach the smear in a very short time. It is even preferable to leave them unmounted, for cedar oil also acts as a bleaching agent after a long time.

It is a very good idea before studying the pallida to familiarize oneself with other forms of spirochætæ, which may be readily found in smegma, simple stomatitis, and many ulcerating lesions. At first, the apparent similarity between these organisms and the pallida will be confusing, but the eye will soon become trained to recognize the exceedingly delicate and regular curves of the pallida. There should be no difficulty in distinguishing between pallida and typical examples of spirochætæ balanitidis, refringens, buccalis, and dentium, but occasionally forms will be found that will give rise to confusion. A repetition of the examination, choosing a different lesion and giving a deeper curettage, will usually clear up the doubt.

To locate the pallida in tissue sections the method of Levaditi is usually employed. His stain and technic are as follows:

First, tissue sections about one m.m. in thickness are fixed for twenty-four hours in 10% formalin.

Second, wash and harden in alcohol for from twelve to sixteen hours.

Third, wash in distilled water until the pieces sink.

Fourth, impregnate from two to three hours at room temperature in the following fluid:

Nitrate of silver, 1.
Pyridin, 10 (added just before using).
Distilled water, 100.

Fifth, wash rapidly in 10% pyridin.

Sixth, reduce the silver by placing in the following solution for several hours:

Pyrogallic acid, 4.
Acetone, 10 (added just before using).
Pyridin, 15.
Distilled water, 100.

Seventh, harden in alcohol; xylol; paraffin.

This method is the one mostly used and is a modification of

a longer, but possibly more reliable, procedure. In the *Annals de l'Institut Pasteur,* Jan. 25, 1906, he gives another modification and also presents several interesting and instructive photographs.

. . . . . .

Investigators desiring a complete and accurate review of the entire subject of the spirochæta pallida, with a complete reference list to the early months of 1907, should consult "Le Micro-organisme de la Syphilis," by Lévy-Bing, Octave Doin, Editeur, No. 8, place de l'Odéon, Paris. Also, Sohernheim, "Handbuch der path. Micro-organismen" (Kolle u. Wasserman), Engänzungsband, Heft II, p. 569, and "The Etiology of Syphilis," by T. Shennan, in *The Scottish Medical and Surgical Journal,* Sept., 1905; reprinted in *The Journal of Cutaneous Diseases,* Oct., 1905.

Recent articles not included in the above-mentioned books and journals may be found in the following list:

Livaditi; La Sero-reaction de la Syphilis, La Presse Médicale, May 22, 1907.

Marie and Livaditi; Les anticorps syphilitiques dans le liquide céphalo-rachidien des paralytiques généraux et des tabétiques. Annals de l'Institut Pasteur, Feb. 25, 1907.

Schütze; Berl. klin. Woch., 1907, No. 5.

Ewing; Recent Studies of Syphilis, N. Y. State Jour. of Med., May, 1907.

Pollitzer; Serum Therapy and Serum Diagnosis in Syphilis, N. Y. Med. Jour., May 25, 1907.

Zabolotni and Maslakovtz; Roussky Vratch, March 17, 1907.

Lapowski; The Recent Investigations in Syphilis and Their Practical Application, N. Y. Med. Jour., April 20, 1907.

De Beurmann and Gougerot; Yaws and Syphilis as Spirillar Diseases, Revue de Médecine, May, 1907.

INDEX

Abadie, 169
Abolitionism, 511
Abolitionist Federation, 512, 550
Abolitionists, arguments of, 515
Abortive Treatment of syphilis, 26
Abscess after mercurial injections, 140
Academy of Medicine of Paris, Commission of, 307, 488, 515
Academy of Medicine of Paris, resolution of, 334
Acne iodic, 204
Administration of drug, 556
Administrative, preventive measures, 313, 487, 492, 527
Adrian, 567
Age at which syphilis is contracted, 479
Aix-la-Chapelle, 87
Alboline, 560
Amicis, 147
Anal chancres, 441
Anderson, 418
Animal experiments, 568
Apes, experiments on, 555
Appendix, 554
Appropriation, therapeutic, 290
Aranjo, 109, 181
Arbitrary administration, 317
Arching of palate in heredo-syphilis, 474
Army and navy, syphilis in, 330
Arnal, 570
Astruc, 95, 104
Aufrecht, 566
Augagneur, 130, 150
Auxiliary medication, 49, 291

Babes, 584
Bacelli, 169
Baermann, 567
Balzer, 109, 173
Ballenger, 586
Bar, 447
Barbantini, 425
Barberousse's pills, 178
Barreyre, 148
Barthélemy, 109, 150, 154, 173, 185, 315
Bassereau, 19
Baths, contagion in public, 426
mercurial, 101
Baum, 416
Becker, 570
Bedclothes, contagion by, 426
Beer, 575
Belladonna, 559
Belloste's pills, 178
Benzoate of mercury, 118
Benzo-iohydrine, 232
Bergeron, 307
Bertarelli, 567
Besnier, 109, 149, 219, 269, 426
Beyer, 436
Bing, 173
Biniodide injections, 119
Biting, contagion by, 415
Blaschko, 145, 169
Blue pills, 179
Boerhaave, 85, 95
Bolognini, 103
Bordet, 567
Bottle-feeding of nurslings, 365
Boudard, 368
Bourgogne, 432
Brain, syphilis of, 465, 508, 542
Brandes, 41
Brandweiner, 573
Breast, chancres of, 430
Briquet, 216
British army, treatment of syphilis in, 333
Brive, epidemic of syphilis at, 436
Brocq, 118
Brothels, decrease of, in Paris, 518
Broussais, 49
Bruck, 562, 575
Brussels International Conference, 494, 504
Buccal chancres, 405
syphilides, contagion from, 406
Bucco-buccal contagion, 406
Budin, 447
Bulkley, Duncan, 406, 411, 424, 426, 436
Bumstead, 106
Bunting, 524
Burlureaux, 330
Buschke, 584
Butler, Mrs. Josephine, 513, 523
Butte, 239

Calomel, fumigations, 103
injections, 133
indications for, 153
objections to, 136
toxic effects of, 137
Campana, 169, 587
Campart, 415
Cardiac malformations in heredo-syphilis, 474
Carrière, 506
Casserole, 86
Castellani, 586
Catanée, 103
Cathelineau, 444
Caubet, 478
Cerebral dystrophies in heredo-syphilis, 474
syphilis, statistics of, 22, 76
Chancre, anal, 440
buccal, 405
cauterization of, 30
diagnosis of, 37
digital, 434
excision of, 33
extragenital, 404
facial, 418
mammary, 430
nasal, 413
ocular, 415
of ear, 421
of scalp, 422
of trunk and limbs, 421
of umbilicus, 422
relation of syphilis to, 19
simple, 532
Charcot, 86
Chavanne-Lure, epidemic of syphilis at, 409
Chicoyneau, 86
Child of syphilitic father, suckling of, 393
Chopping, 169
Chronic intermittent treatment, 278
Cigars and cigarettes, contagion by, 409, 416
Clandestine prostitution, 492, 549
Clausin, 567
Cleft-palate, 474
Chlorides of gold and sodium, 559
Clothes, contagion by, 425
Club-foot, 474
Colle's law, 383, 574
Colin, 307, 315, 436
Combs, contagion by, 421
Commission of Paris Academy of Medicine, 1, 488, 515
Condé, epidemic of syphilis at, 432
Confession of syphilis, 551
Congenital dislocation of hip, 474
Contagious Diseases Acts, 513
Continence, alleged dangers of, 550
Contract between parents and wet-nurse, 360
Cooper, Alfred, 269
Corbis, 26
Coryza, iodic, 204
Coughing, contagion by, 415
Contagne, 440
Cranial malformations in heredo-syphilis, 474
Cryptorchidism, 474
Cuisinier's syrup, 54
Cube, 585
Cupping, contagion by, 428
Curtis, 580
Cutaneous effects of mercury, 68
iodide, 210
Cyanide of mercury, 117
Cytoryctes lues, 567

Dangers of syphilis, 307, 462, 468, 526, 544
Deaf-Mutism, 474
De Chapelle, 418
Delore, 358
Denis-Dumont, 269
Dental dystrophies in heredo-syphilis, 474
instruments, contagion by, 410
Depaul, 341
Depopulation of France, 1, 337
Deubel, 424
Deville, 315
Diagnosis, serum, 575
Diday, 18, 182, 341, 369, 383
Diet in syphilis, 292
Digital chancres, 434
Dinkler, 169
Divorce, syphilis and, 470, 545
Domernikova, 584
Donné, 566
Dosage of protoiodide and sublimate, 197
Dowse, 423
Drawing of breasts, contagion by, 432
Drinking glasses, contagion by, 407
Dron, 381, 386
Du Castel, 411
Duchatelet, 180, 309
Duclaux, 529
Dulles, 411
Dupuytren's pills, 182, 193
Dwarfism, 474
Dystrophic effects of heredo-syphilis, 474, 545

Ectopia, vesical, 474
Ectrodactylia, 474
Ectromelia, 474
Ehrlich, 575
Endermic mode, 556
Epstein, 145
Eruptions caused by iodide, 210
mercury, 68
Étienne, 109, 166, 478
Eustachian catheter, contagion by, 414

Ewing, 571
Excision of chancre, 33
Experiments in Java, 571
Extragenital syphilis, 406
gravity of, 438
Eye, chancre of, 415

Facial chancres, 417
Fallopius, 104
Fanoni, 561
Feeding utensils, contagion by, 408
Feltz's decoction, 53
Fenwick, 216
Feuilloley, 470
Feulard, 109
Fingers, contagion by, 413, 418, 424
Fischer, 584
Flagellate, 567
Flexnor, 585
Færster, 216
Fontana, 582
Fordyce, 562
Fournier, Alfred, 216, 269, 307, 385, 399, 443, 468, 475, 555, 561
Fournier, E., 140, 160, 163, 474, 478
Fracaster, 48
Fragility of life in heredo-syphilis, 474,
Franck, 529
Fumigation, 103

Gagnière, 161
Galliot, 109
Gaston, 426
Gastro-intestinal effects of mercury, 64, 139
Geets, 582
General paralysis, 468, 542
General treatment of syphilis, 48, 240
Gengou, 567
Genito-buccal contagion, 406
Genito-facial contagion, 417
Genito-urinary dystrophies in heredo-syphilis, 474
Gibert, 478
Gibert's pills and syrup, 234
Giemsa, 588
Gigantism, 474
Gilles de la Tourette, 125, 219
Giovannini, 411
Glass-blowers syphilis, 411
Gleet, 535
Glottis, iodic œdema of, 215
Gold, chlorides of, 559
Goldhorn, 581
Gonorrhœa, 533
frequency of, 503
Gonorrhœal ophthalmia, 535
rheumatism, 536
sterility, 536
Gorl, 169
Gottheil, 560
Gray oil, 159
Greef, 567

Grœnow, 216
Grubler, 588
Guaiacum, 48
Guillimet, 216
Guyot, Yves, 517

Hæmorrhage after injections, 146
Hairpin, contagion by, 421
Hallopeau, 129, 281
Handkerchief, contagion by, 414
Hanot, 411
Hardy, 426
Hebra, 109
Hemimelia, 474
Heredity, results of maternal and paternal, 339, 468, 473
Heredo-syphilis, delayed, 471
dystrophies of, 473
infantile mortality in, 472, 493, 545
of second generation, 476
Héricourt, 572
Hermophenyl, 115
Hill, Berkeley, 269
Hillairet, 408
Hirsch, 524
Hoffmann, 562, 567
Holtzhauer, 567
Horteloup, 106
Hospitalization of prostitutes, 324
of syphilitics, 455, 501
Huchard, 216
Hugel, 567
Hunter, 109
Hutchinson, 212, 434, 436
Hydrocephalus, 474
Hygienic treatment of syphilis, 52, 294
Hypodermic mode, 556

Ignored syphilis, 463
Immunity and serum therapy, 572
Increase of syphilis, 453
Incubation period, suckling in, 389
Infantile mortality due to syphilis, 337, 472
Infantilism, 474
Ingestion of mercury, 174, 556
Injections, 556
Injections, advantages of, 110, 121
disadvantages of, 123
frequent, 125
infrequent, 128
intravenous, 169
of biniodide, 118
of calomel, 133
of gray oil, 159
technique of, 112
Injective mode, 556
Instructions to syphilitics, 458, 500
to young men in danger of syphilis and venereal disease, 503, 531
Instruments, contagion by, 414, 428
Insufflation, contagion by, 412

Inunction, 83, 555
advantages of, 91
disadvantages of, 92
indications for, 96
Iodide of potassium, 49, 200, 558, 564
administration of, 218
Iodide of potassium, complementary treatment by, 275
dosage of, 221
in secondary period, 228
not indispensable, 226
substitutes for, 231
Iodidides, 210
Iodine, 232
Iodism, 203
Ipecac, 558

Jacquet, 478
Jacquemier, 341
Jemma, 169
Jullien, 39, 109, 144, 161, 414, 438, 478, 566

Kaposi, 129, 461
Keiser's sugar plums, 179
Keyes, 269
Kiolemenoglu, 585
Kissing, contagion by, 407, 414, 421
Klebs, 570
Klingmüller, 567
Klotz, 145
Kraus, 130, 572

Lalouette, 105
Lactucarii, 558
Lambkin, 173
Lambkin's gray oil, 172
Lancereaux, 341, 411, 567
Landouzy, 465
Lane, 169
Lang, 109
Lang's gray oil, 162
Lannelongue, 341
Lannois, 173
Lapowski, 562
Larnac, 360
Lassar, 504, 570
Latrines, contagion by, 426
Lavergne, 421
Lee, Henry, 106
Leeuwenhoek, 566
Lees, 408
Lefort, 307
Legal basis for suppression of prostitution, 318
Legros, 567
Leloir, 411, 416, 429, 432
Lesser, 145, 269
Leucoplasia, 467, 543
Levy, 309
Lewentaner, 269
Lewin, 109, 121, 129, 145
Liégeois, 109
Limbs, deformity of in heredo-syphilis, 474
Linen, contagion by, 425
Lisle, 566
Livadite, 584
Literature, 593
Lock hospitals, 327
Longet, 402
Lorain, 400
Lukasiewicz, 129
Lupara, epidemic of vaccinal syphilis at, 403
Lusitanus, 431
Lustgarten, 180, 566

Malakouski, 216
Marjolin, 341
Marriage and syphilis, 459, 468
Martineau, 109, 180, 269, 281, 567
Maslakortz, 575
Massa, 103
Maurange, 167
Mauriac, 40, 107, 122, 150, 421
Maxillary deformities in heredo-syphilis, 474
Mayer, 570
Medical contagion, 428, 435
inspection of prostitutes, 319
prophylaxis, 452, 495
Mercurial, baths, 99, 101
flannels, 108
fumigation, 103
ingestion, 174, 556
injection, 109, 116, 128, 166, 169, 556
inunction, 83
plasters, 99
rashes, 68
stomatitis, 59, 94, 123, 138
Mercury, acetate of, 179
action of, 56
alaninate of, 115
asparaginate of, 115
benzoate of, 118, 166, 169
biniodide of, 118
binoxide of, 179
black sulphide of, 179
cacodylate of, 115
chloro-albuminate of, 115
curative action of, 72
cyanide of, 117, 169, 180
double iodide of, with ammonia, 115
with sodium, 115
formamide of, 115
glycocolate of, 115
in tertiary stage, 230
iodo-tannate of, 115
lactate of, 115
peptonate of, 116
persalts of, 559, 564
preventive action of, 73
protoiodide of, 181, 183

Mercury, protosalts of, 559
salicylate of, 164, 181
sozoiodolate of, 115
sublimate of, 116, 166, 169, 181
succinimide of, 115
tannate of, 180
therapeutic action of, 72
thymol acetate of, 165
toxic effects of, 65, 137
urate of, 115
Merget, 108
Méricourt, 307, 314
Merited and unmerited syphilis, 310, 347, 468
Metchnikoff, 555, 567
Microcephalus, 474
Midwives, contagion by, 436
Mixed treatment, 233, 556
Mœller, 145
Money, contagion by, 411
Monnet, 418
Monstrosities caused by heredo-syphilis, 475
Moral hygiene, 295
prophylaxis, 490
Morel-Lavallée, 109, 239
Moreschi, 575
Morphology, 580
Mortality due to heredo-syphilis, 472
Mouth, hygiene of, 60
Mucous patch, contagiousness of, 499, 539
Musical instruments, contagion by, 411
Myrrh, tincture of, 559

Nasal chancres, 414
Nasal deformities caused by heredo-syphilis, 474
Natiform skull, 474
Neissen, 566
Neisser, 109, 269, 281, 555, 562
Nervous predisposition, prophylactic treatment of, 264
Nervous system, predeliction of syphilis for, 465, 542
Neuralgia, iodic, 207
Nodosities from injections, 124, 140
Noeggerath, 583
Novy, 582

Obermeier, 582
Occupational contagion, 411
Occurrence of the spirochæta pallida, 583
Odmanson, 145
Œstreicher, 167
Opium, 558
Opportunist method, 252
Ory, 400
Otis, 411
Oudin, 160

Pain after injections, 124, 141
Panas, 109
Panea, 584
Paper knife, contagion by, 410
Parasyphilis, 283, 467, 486, 543
Paré, Ambrose, 431
Parrot, 341
Paternal heredity, preventive treatment of, during pregnancy, 442
Paternal syphilis, 393
Pellizari, 418, 421, 572
Penholders, contagion by, 410
Perrin, 421
Petit, 26
Phagedena, 51
Piffard, 558, 563
Pileur, 109, 159
Pinard, 447, 450
Plasters, mercurial, 99
Plank's gummy mercury, 178
Plant, 579
Plenciz, 566
Plummer's pills, 179
Pollini's decoction, 54
Polydactylism, 474
Poncet, 417
Porak, 447
Portalier, 109, 142
Postage stamps, contagion by, 411
Potassium chlorate, 559
Powell, 586
Practical importance of diagnostic serum, 579
Pregnancy, effect of syphilis on, 12
mercury on, 77
Pressensé, 518
Prevention of syphilis in army and navy, 330
Preventive measures against syphilitic sucklings, 382
against wet-nurses, 384
method, 257
Proca, 588
Professional contamination, 433, 435
Profeta's law, 574
Prophylaxis, administrative, 313, 487, 492, 527
Prophylaxis, moral and religious, 490
by treatment, 452, 495
Prostitutes, clandestine, 492, 549
hospitalization of, 324
medical inspection of, 319, 521, 528
Prostitutes, registration of, 318, 528
Prostitution in Paris, 314
classed with unhealthy trades, 529
Protoiodide of mercury, 181, 183
and sublimate, 190
Prowazek, 575
Public prevention of syphilis, 307, 491, 500
Pulmonary embolism after injections, 145
Purpura, iodic, 208

Rabelais, 83
Racocineanu, 147
Rasori, 40
Raubitschek, 583
Razor, contagion by, 419
Recent advances in the knowledge of syphilis, 566
Registration of prostitutes, 318, 521

Religious prophylaxis, 490
Renault, 145, 150
Rey, 145
Ribemont-Dessaignes, 446
Richet, 572
Rickets and heredo-syphilis, 476
Ricochets of syphilitic contagion, 379, 481, 527
Ricord, 27, 49, 76, 200, 216, 244, 269, 307, 341, 416, 421, 439
Ricord's iodide mixture, 234
pills, 183
Ricordi, 381
Righter, 421
Rivalta epidemic of vaccinal syphilis, 402
Robert, 424
Roddick, 410
Roger, 341
Rollet, 408, 411, 421
Romanowsky, 588
Roussel, 408
Rout, 555, 567

Sainte Euphémie epidemic of syphilis, 436
Saint Lazare Hospital, 327
Salicylate, 560
Saling, 587
Saliva, contagion by, 415, 424
Salivation, iodic, 208
mercurial, 58
Salmon, 570
Sarsaparilla, 53
Sassafras, 54
Scarenzio, 109, 129
Scheven, 525
Schlimpert, 584
Schucht, 579
Schütz, 567
Schultz, 583, 585
Schultze, 145
Sedillot's pills, 179
Serum treatment, 237, 572
Sevestre, 427
Shaudinn, 562, 567
Shaving utensils, contagion by, 419
Siedlecki, 583
Siegel, 567
Sigmund, 109
Silver nitrate crayon, contagion by, 428, 441
Simmons, 584
Simple chancre, 532
Sireday, 341
Skin-grafting, contagion by, 424
Smirnoff, 109, 244
Smoking utensils, contagion by, 409
Sobernheim, 583
Social dangers of syphilis, 309, 462
Society, duties of medical men to, 378
for moral and sanitary prophylaxis, 489, 510
Sodium, chlorides of, 559
Sodomy, and chancres from, 410
Solicitation, 313, 320, 548
Speaking-tubes, contagion by, 411
Specific medication, 53
Sperk, 570
Spillmann, 412
Spina bifida, 474
Spirochæta pallida, 566
Spitting, contagion by, 415
Spitzer, 572
Stansfield, 524
Staehlin, 583
Staining methods, 588
Stef, 444
Sterilization of syphilis, 496
Sterility from gonorrhœa, 536
Sticking plaster, contagion by, 421, 424
Stomatitis, 94, 123, 138
Stoukowenkoff, 109, 169, 522
Stromberg, 525
Sublimate, 116, 166, 169, 181, 190
Suckling by goat, 367
syphilitic wet-nurse, 366
Sucklings, contagion by, 412
Suction, contagion by, 415
Sweets, contagion by, 411
Syndactilism, 474
Syphilis, age at which contracted, 479
by ricochets, 379, 481, 527
cerebral, 22, 76
contagious lesions of, 498, 539
dangers to the family, 468, 526, 544
Syphilis, dangers to the individual, 308, 462, 526
Syphilis, dangers to society, 309, 462, 527
Syphilis, dispensaries for, 458
fecund and sterile, 496
frequency of, 485, 537
general treatment of, 48, 240
hereditary effects of, 308, 337, 471
hospital treatment of, 455, 501
ignored, 463
league against, 485
merited and unmerited, 311
prevalence of, 453
prophylaxis of, by treatment, 452, 495
Syphilis, public prevention of, 307, 490, 500
Syphilis, sources of, in women, 347, 468

Syphilis, stages, 537
sterilization of, 496
teaching of, 326, 460
tertiary, 24, 79, 272, 286
of third generation, 477
Syringes, contagion by, 441

Tabes, 468
Tacks, contagion by, 412
Tardieu, 373, 440
Tarnier, 449, 460
Tarnowsky, 109, 478
Tattooing, contagion by, 424
Taylor, 39, 109, 399, 427, 556, 561
Teaching of syphilis and venereal diseases, 326, 460
Tepliaschin, 416
Terrillon, 109
Tertiarism after benign secondaries, 24
influence of treatment on, 79, 272, 286
Tertiary syphilis, analysis of, 464, 540
Thibierge, 159
Third generation, syphilis of, 477
Tissier, 216
Tommasoli, 238, 461, 572
Tomaszewski, 583
Tooth forceps, contagion by, 410
Tortella, 83, 431
Tourcoing, epidemic of syphilis, 432
Towels, contagion by, 416
Toys, contagion by, 410
Treatment of syphilis by chronic intermittent method, 262, 278, 555
Treatment, continuous, 556
expectant, 556
intermittent, 556
of syphilis by fumigation, 103
ingestion, 174, 556
injection, 109, 556
Treatment of syphilis by intravenous injection, 169
Treatment of syphilis by inunction, 83
opportunist method, 252
preventive method, 257
duration of, 248, 264, 561
Treatment of syphilis in cases of doubtful chancre, 247
Treatment of syphilis in early stages, 244, 561
Trousseau, 341
Turenne, 567

Ulrich de Hutton, 84
Umbilicus, chancre of, 422
Uzac, 169

Vaccinal syphilis, 399
Van Swieten's liquor, 182, 193
Venereal disease, frequency of, in young people, 503
Venereal disease, instruction of young people in, 503, 531
Venereological dispensary, 458
Venesection, contagion by, 428
Verchère, 150
Versilova, 584
Vigarou's decoction, 54
Vigo's emplastrum, 84, 99
Volpno, 582

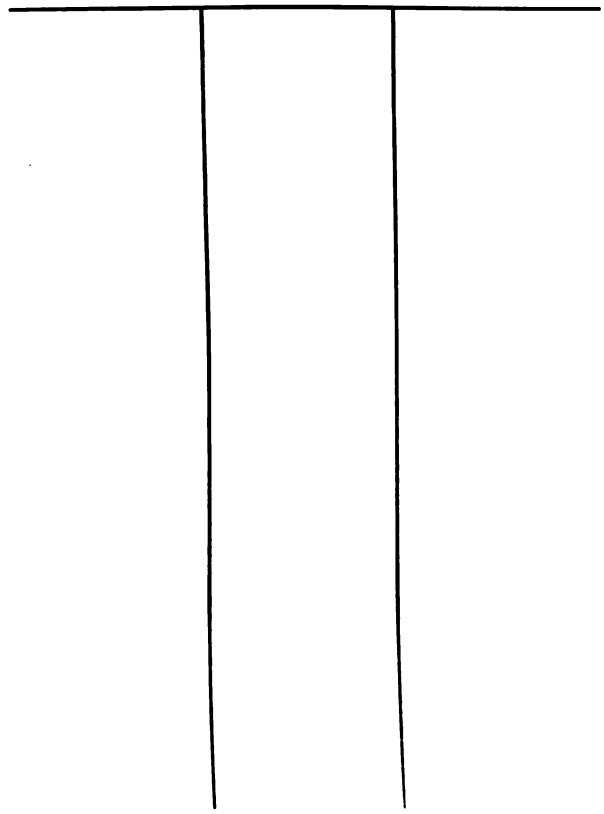
Wallace, 49, 200
Warlomont, 402
Wassermann, 562
Water closets, contagion by, 426
Watson, Spenser, 414
Weber, 269
Wellman, 586
Wet-nurse and child of syphilitic father, 399
Wet-nurses, compensation for, 376
dispute with parents, 372
protection of, 371
retention of, 377
syphilitic, 389
and sucklings, 355
suckling by syphilitic, 366
Wickham, 173
Wine shops, prostitution in, 315, 548
Wise, 562
Women, sources of syphilis in, 347, 469

Young men of eighteen, doctor's advice to, 531

Zabolotni, 575
Zeissl, 269
Zittmann's decoction, 53

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on
or before the date last stamped below.



N33 Fournier, A. 92152
F75m The treatment and
1907 prophylaxis of syphilis.

NAME	DATE DUE